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(71) Applicant *(for all designated States except US)*: **BIOGEN, INC.** [US/US]; 14 Cambridge Center, Cambridge, MA 02142 (US).

(72) Inventor; and

(75) Inventor/Applicant *(for US only)*: **KARPUSAS, Michael** [US/GR]; Platonos 7, Agios Basilios, 26500 Patra (GR).

(74) Agents: **HALEY, James, F.** et al.; Fish & Neave, 1251 Avenue of the Americas, New York, NY 10020 (US).

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(54) Title: CRYSTAL STRUCTURE OF BAFF, AND USE THEREOF IN DRUG DESIGN

(57) Abstract: The present invention relates to crystallizable compositions and crystals of BAFF. In addition, this invention relates to the high resolution structure of a BAFF polypeptide as obtained by X-Ray crystallography. This invention also relates to a computer (machine) comprising a machine-readable data storage medium comprising a data storage material enconded with machine-readable data comprising the structure coordinates provided by this invention. This invention also relates to methods of using the structure coordinates of BAFF to solve the structure of similar or homologous molecules or molecular complexes and methods of determining the homology model of a similar or homologous molecule, such as APRIL. This invention also provides a computer capable of producing a three-dimensional representation of APRIL based on the homology model structure coordinates. This invention also relates to methods using the structure coordinates of BAFF to design chemical entities or compounds, including agonists or antagonists, with improved properties (such as increased or decreased binding affinity for (BAFF). This invention also provides variants of BAFF. This invention also relates to compositions comprising said chemical entities, compounds, including agonists or antagonists of BAFF, or variants.

CRYSTAL STRUCTURE OF BAFF, AND USE THEREOF IN DRUG DESIGN

This application claims benefit of United States provisional application number 60/317,524, filed September 6, 2001, the disclosure of which is incorporated by reference herein.

TECHNICAL FIELD OF THE INVENTION

The present invention relates to crystallizable compositions and crystals of BAFF. In addition, this invention relates to the high resolution structure of a BAFF polypeptide as obtained by X-ray crystallography. This invention also relates to a computer (machine) comprising a machine-readable data storage medium comprising a data storage material encoded with machine-readable data comprising the structure coordinates provided by this invention. This invention also relates to methods of using the structure coordinates of BAFF to solve the structure of similar or homologous molecules or molecular complexes and methods of determining the homology model of a similar or homologous molecule, such as APRIL. This invention also provides a computer capable of producing a three-dimensional representation of APRIL based on

the homology model structure coordinates. This invention also relates to methods using the structure coordinates of BAFF to design chemical entities or compounds, including agonists or antagonists of BAFF, that specifically bind BAFF, as well as to design variants of BAFF agonists or antagonists, with improved properties (such as increased or decreased binding affinity for BAFF). This invention also provides variants of BAFF. This invention also relates to compositions comprising said chemical entities, compounds, including agonists or antagonists of BAFF, or variants.

BACKGROUND OF THE INVENTION

BAFF (which stands for B-cell activating factor belonging to the tumor necrosis factor (TNF) family) is a recently identified member of the TNF family of ligands (Shu, H.B., et al., J Leukoc Biol, 65(5): p. 680-3 (1999); Moore, P.A., et al., Science, 285(5425): p. 260-3 (1999); Schneider, P., et al., J Exp Med, 189(11): p. 1747-56 (1999)). BAFF is also known by other names, such as BlyS, TALL-1, THANK and zTNF4.

BAFF is a type II membrane protein that is expressed in different cell types, including T-cells and dendritic cells. BAFF can also exist as a soluble form; and the soluble form can induce proliferation of peripheral blood lymphocytes, just like the full-length protein (Schneider, P., et al., J Exp Med, 189(11): p. 1747-56 (1999), the disclosure of which is incorporated by reference herein). The full-length BAFF is a trimeric molecule that includes a globular

extracellular TNF-homologous domain, an extracellular stalk, a short transmembrane segment and a small cytoplasmic domain. Soluble BAFF also forms trimers. Several studies indicate that BAFF is a key regulator of the peripheral B-cell population (Moore, P.A., et al., Science, 285(5425): p. 260-3 (1999); Schneider, P., et al., J Exp Med, 189(11): p. 1747-56 (1999); Batten, M., et al., J Exp Med, 192(10): p. 1453-66 (2000)). BAFF has also been shown to play an essential role in the normal development of B-cells (Schiemann et al., An Essential Role for BAFF in the Normal Development of B-cells Through a BCMA-Independent Pathway, Sciencexpress (Aug. 16, 2001), at http://www.sciencexpress.org and Schiemann et al., Science 2001 Sep. 14; 293(5537): 2111-2114; the disclosures of both are incorporated by reference herein).

BAFF acts by binding to receptors expressed on B-cells and inducing B-cell proliferation and survival. So far, three receptors of BAFF have been identified: B-cell maturation antigen ("BCMA") (Madry, C., et al., Int Immunol, 10(11): p. 1693-702 (1998); Thompson, J.S., et al., J Exp Med, 192(1): p. 129-35 (2000)), transmembrane activator and CAML interactor ("TACI") (Xia, X.Z., et.al., J Exp Med, 192(1): p. 137-43 (2000); Yan, M., et al., Science, 290(5491): p. 523-7 (2000)) and BAFF receptor ("BAFF-R") (Thompson et al., BAFF-R, a Novel TNF Receptor That Specifically Interacts with BAFF, Sciencexpress (Aug. 16, 2001, at http://www.sciencexpress.org) and Thompson, J.S. et al., Science (2001 Sep. 14); 293 (5537): 2108-2111, the disclosures of both of which are incorporated by

reference herein). These receptors lack signal sequences and thus are classified as type III membrane proteins, a fact that is uncommon for TNF family receptors. Two of the receptors (BCMA and TACI) also bind to APRIL (which stands for a proliferation-inducing ligand), another TNF family member that is closely related to BAFF both structurally and functionally (Hahne, M., et al., J Exp Med, 188(6): p. 1185-90 (1998); Xia, X.Z., et al., J Exp Med, 192(1): p. 137-43 (2000); Gross, J.A., et al., Nature, 404(6781): p. 995-9 (2000); Wu, Y., et al., J Biol Chem, 275(45): p. 35478-85 (2000); Marsters, S.A., et al., Curr Biol. 10(13): p. 785-8 (2000)). It appears that BAFF signaling is primarily through BAFF-R receptor (Thompson et al., BAFF-R, a Novel TNF Receptor That Specifically Interacts with BAFF, Sciencexpress (Aug. 16, 2001), at http://www.sciencexpress.org and Thompson, J.S. et al., Science (2001 Sep 14); 293 (5537): 2108-2111). The extracellular domain of BAFF is involved in the interaction with one or more of the BAFF receptors. The extracellular domain of APRIL is involved in the interaction with one or more of the APRIL receptors.

The TNF family of ligands includes, among others, TNF-α, lymphotoxin-α (LT-α), lymphotoxin-β (LT-β), CD40 ligand (CD40L), OX40 ligand (OX40L), Fas ligand, and Apo2L/TRAIL (Locksley, R.M., et al., Cell, 104(4): p. 487-501 (2001)). Crystal structures have been determined for the TNF-homologous domains of TNF-α (Jones, E.Y., D.I. Stuart, and N.P. Walker, Nature, 338(6212): p. 225-8 (1989); Eck, M.J. and S.R. Sprang, J Biol Chem, 264(29): p. 17595-605 (1989)), LT-α (Eck,

M.J., et al., J Biol Chem, 267(4): p. 2119-22 (1992)), CD40L (Karpusas, M., et al., Structure, 3(12): p. 1426 (1995) and Karpusas, M., et al., Structure, 3: p. 1031-1039 (1995)) and Apo2L/TRAIL (Cha, S.S., et al., Immunity, 11(2): p. 253-61 (1999); Hymowitz, S.G., et al., Biochemistry, 39(4): p. 633-40 (2000)). The structures show that these domains adopt the jellyroll, or β-sheet sandwich motif.

The TNF ligands induce a signal by binding to the corresponding TNF family receptors expressed on the surface of the target cell. Each receptor is an elongated molecule that consists of tandem repeats, termed cysteine-rich domains ("CRD"), due to the high number of disulfide bridges contained in each repeat. A more precise description of the modular structure of the TNF family receptors suggests that the basic building block is roughly half a CRD in terms of size, and can exist in different types, types A, B, C, each containing one or two disulfide bridges (Naismith, J.H. and S.R. Sprang, Trends Biochem Sci, 23(2): p. 74-9 (1998)).

Crystal structures of LT-α and TRAIL complexed with their receptors provided insights into the common aspects of TNF family ligand-receptor recognition (Banner, D.W., et al., Cell, 73(3): p. 431-45 (1993); Hymowitz, S.G., et al., Mol Cell, 4(4): p. 563-71 (1999); Mongkolsapaya, J., et al., Nat Struct Biol, 6(11): p. 1048-1053 (1999); Cha, S.S., et al., J Biol Chem, 275(40): p. 31171-7 (2000)). The structures show that TNF ligands induce a signal by forming a trimeric complex with the receptors.

The structural basis of the interaction of BAFF with its receptors is of special interest due to a very unusual characteristic: BCMA and BAFF-R are the only known TNF receptors that appear to contain only one CRD. In addition, sequence comparison indicates that BCMA, TACI and BAFF-R are rather distantly related to other members of the TNF receptor family (Madry, C., et al., Int Immunol, 10(11): p. 1693-702 (1998); Thompson et al., BAFF-R, a Novel TNF Receptor That Specifically Interacts with BAFF, Sciencexpress (Aug. 16, 2001), at http://www.sciencexpress.org and Thompson, J.S. et al., Science (2001 Sep 14); 293 (5537): 2108-2111). This suggests the presence of different folding motifs in the receptor extracellular domains and possibly new associated modes of binding.

Recent data indicate that BAFF and APRIL are key players in autoimmune disease, while APRIL is also implicated in cancer (Ware, C.F., J Exp Med, 192(11): p. F35-8 (2000); Yu, G., et al., Nat Immunol, 1(3): p. 252-6 (2000); Khare, S.D. and H. Hsu, Trends Immunol, 22(2): p. 61-63 (2001)) (mice over-expressing BAFF also display mature B-cell hyperplasia (Mackay, F., et al., J Exp Med, 190(11): p. 1697-710 (1999)). Transgenic mice that overexpressed BAFF exhibited increased numbers of peripheral B lymphocytes and developed an autoimmune condition similar to systemic lupus erythematosis ("SLE") (Mackay, F., et al., J Exp Med, 190(11): p. 1697-710 (1999)). Moreover, the amount of BAFF in the serum of SLE patients is found to be elevated compared to healthy individuals (Zhang, J., et al., J Immunol, 166(1): p. 6-10 (2001)). These results indicate the involvement of BAFF in antibody-mediated

autoimmune diseases. BAFF, therefore, is an attractive candidate target for diagnosis and treatment of autoimmune diseases, and possibly other immune system disorders. Indeed, when transgenic mice that overexpressed BAFF were treated with a soluble receptor of BAFF, B-cell population and severity of SLE-like disease were significantly reduced (Gross, J.A., et al., Nature, 404(6781): p. 995-9 (2000)). In addition, expression of APRIL is upregulated in many tumors and a soluble form of BCMA was found to inhibit tumor growth (Rennert, P., et al., J Exp Med, 192(11): p. 1677-84 (2000)).

Agents that bind to BAFF and interrupt its interaction with one or more of its receptors can be used to treat autoimmune diseases and other immune or non-immune disorders associated with inappropriate or abnormal BAFF expression. There is currently a need for agents that can serve as agonists or antagonists of BAFF. Further development of novel agents to serve as human therapeutic agents, which are effective in interrupting BAFF and its interaction with one or more receptors of BAFF, is hampered by the lack of structural information of BAFF. That information is provided for the first time by the present invention.

SUMMARY OF THE INVENTION

Applicants have solved the above-identified problem by providing compositions, which can be crystallizable, and crystals of BAFF and methods for using such compositions and crystals.

This invention also provides the structure coordinates of BAFF.

This invention also provides methods for determining at least a portion of the three-dimensional structures of molecules or molecular complexes which contain at least some structurally similar features to BAFF. This invention also provides methods for determining at least a portion of the homology model structure of molecules or molecular complexes which contain at least some structurally similar features to BAFF. In a preferred embodiment, this invention provides methods for determining a homology model of APRIL. This invention also provides homology model coordinates of APRIL.

This invention also provides methods for designing chemical entities, compounds, such as agonists and antagonists of BAFF, and variants of agonists or antagonists of BAFF. This invention further relates to compositions comprising the chemical entities, the compounds, such as agonists and antagonists of BAFF, and variants of agonists or antagonists of BAFF, wherein such chemical entities, compounds, including agonists or antagonists of BAFF, and variants are rationally designed by means of the structure coordinates of BAFF, or portions thereof. The invention further relates to use of the above-identified chemical entities, compounds, such as agonists and antagonists of BAFF, and variants of an agonist or antagonist of BAFF, to treat conditions associated with inappropriate or abnormal BAFF activation or inactivation in a subject.

This invention also provides a computer, which comprises a storage medium comprising a data storage material, for producing three-dimensional

representations of molecules or molecular complexes of BAFF and methods for using these three-dimensional representations to design: 1) chemical entities and compounds that associate with BAFF, 2) compounds, such as potential agonists or antagonists of BAFF, and 3) variants of an agonist or antagonist of BAFF, by using computational means to perform a fitting operation between chemical entities, compounds, such as agonists and antagonists of BAFF, and variants of an agonist or antagonist of BAFF and the molecules or molecular complexes of this invention. This invention also provides the chemical entities, the compounds, such as agonists and antagonists of BAFF, and variants of an agonist or antagonist of BAFF, and compositions comprising the chemical entities, the compounds and the variants.

This invention also provides methods for designing variants of BAFF. In a preferred embodiment, the variants of BAFF designed by these methods bind to a subset of the receptors that bind to BAFF. In another preferred embodiment, the variants of BAFF bind one or more receptors of BAFF with higher or lower affinity than native BAFF. This invention also provides these BAFF variants.

The foregoing and other objects (such as methods of using a homology model of APRIL to design chemical entities, compounds, including agonists or antagonists of BAFF, and variants of agonists or antagonists of APRIL), features and advantages of the present invention, as well as the invention itself, will be more fully understood from the following description of preferred embodiments.

BRIEF DESCRIPTION OF THE DRAWINGS

The following abbreviations are used in Figures 8 and 10:

"Atom type" refers to the element whose coordinates are measured. The first letter in the column defines the element.

"Resid" refers to the amino acid residue identity. Amino acid residue numbers for BAFF or APRIL correspond to the numbering system in full-length human BAFF (Figure 9a; SEQ ID NO: 1) or full-length APRIL (Figure 9c; SEQ ID NO:3), respectively.

"X, Y, Z" define the atomic position of the element measured.

"B" is a thermal factor that measures movement of the atom around its atomic center.

"Occ" is an occupancy factor that refers to the fraction of the molecules in which each atom occupies the position specified by the coordinates. A value of "1" indicates that each atom has the same conformation, i.e., the same position, in all molecules of the crystal.

"Mol" refers to the molecules in the asymmetric unit.

Figure 1 depicts a view of a representative region of the final 2Fo-Fc electron density map contoured at 1.0 σ.

Figure 2a depicts a ribbon diagram of BAFF trimer. The front monomer has β-strands labeled while the back monomers are unlabelled in dark and light grey. The

figure was made with RIBBONS (Carson, *J. Appl. Cryst.*, 24, pp. 958-961 (1991)).

Figure 2b depicts a space filling model of BAFF trimer viewed along the 3-fold axis. The arrows point to the putative receptor binding sites. The figure was made with RIBBONS (Carson, *J. Appl. Cryst.*, 24, pp. 958-961 (1991)).

Figure 3a shows a sequence alignment of TNF family members based on structural superimpositions. The secondary structure assignment and numbering correspond to BAFF.

Figure 3b shows superimposed Cα backbones of BAFF and TNF-α structures in stereo. BAFF is shown in dark grey and TNF-α in light grey. The β-strands of the structures superimpose well while the loops connecting the β-strands differ in the two structures.

Figure 4 shows the solvent accessible surface of BAFF and APRIL trimers shaded according to electrostatic potential calculated with GRASP. Darker shaded areas represent positively charged regions or negatively charged regions. A schematic of the possible BAFF-R secondary structure is also shown. The arrows point to the putative location of the BAFF-R binding sites. In the BAFF structure the putative BAFF-R binding site is negatively charged, and will therefore compliment the positively charged BAFF-R secondary structural element which is positively charged. But the putative BAFF-R binding site in the APRIL structure is positively

charged, and will thus repel the positively charged BAFF-R secondary structural element. The short vertical lines indicate the appropriate orientation of the BAFF and APRIL 3-fold axes.

Figure 5 shows a diagram of a system used to carry out the instructions encoded by the storage medium of Figures 6 and 7.

Figure 6 shows a cross-section of a magnetic storage medium.

Figure 7 shows a cross section of an optically-readable data storage medium.

Figure 8 (8-1 to 8-104) lists the atomic structure coordinates for the extracellular domain of human BAFF, as derived by X-ray crystallography from crystals of that polypeptide in protein data bank (PDB) format. Molecules A, B, C, K, L and M represent two BAFF trimers in the asymmetric unit.

Figure 9a shows the amino acid (aa) sequence of full-length human BAFF (SEQ ID NO: 1). The section of BAFF present in the construct crystallized is shown in bold.

Figure 9b shows myc-tagged human BAFF amino acids 136 to 285 fusion protein (SEQ ID NO: 2). The myc tag is in bold.

Figure 9c shows the amino acid (aa) sequence of human APRIL (SEQ ID NO: 3; Swiss-Prot entry 075888). Bracketed residues correspond to residues 114 to 250.

Figure 10 (10-1 to 10-50) lists the homology model structure coordinates for the extracellular domain of

APRIL in protein data bank (PDB) format, as derived by homology modeling based on the X-ray diffraction from crystals of a BAFF polypeptide.

DETAILED DESCRIPTION OF THE INVENTION

The following discussion illustrates and exemplifies the variety of contexts and circumstances in which the invention can be practiced, as well as providing specific embodiments of the invention.

Throughout this specification and claims, the word "comprise," or variations such as "comprises" or "comprising," will be understood to imply the inclusion of a stated integer or group of integers but not the exclusion of any other integer or group of integers.

In addition, amino acid residue numbers given throughout the specification and claims for BAFF or APRIL correspond to the numbering system in full-length human BAFF (Figure 9a; SEQ ID NO: 1) or full-length APRIL (Figure 9c; SEQ ID NO:3), respectively.

AMINO ACIDS ABBREVIATIONS

A	=	Ala	= Alanine
V	=	Val	= Valine
L	=	Leu	= Leucine
I	=	Ile	= Isoleucine
P	=	Pro	= Proline
F	=	Phe	= Phenylalanine
W	=	Trp	= Tryptophan
M	=	Met	= Methionine
G	=	Gly	= Glycine
S	=	Ser	= Serine
T	=	Thr	= Threonine
C	=	Cys	= Cysteine
Y	=	Tyr	= Tyrosine
N	=	Asn	= Asparagine
Q	=	Gln	= Glutamine

D = Asp = Aspartic Acid
E = Glu = Glutamic Acid
K = Lys = Lysine
R = Arg = Arginine
H = His = Histidine

Compositions and Crystals

According to a preferred embodiment, the compositions of this invention are crystallizable. Those compositions comprise a BAFF polypeptide.

This invention also provides a crystal comprising a BAFF polypeptide.

The BAFF polypeptide is any BAFF polypeptide, preferably one that is capable of specifically binding to a receptor of BAFF. In a preferred embodiment, the BAFF polypeptide comprises the extracellular domain, or a portion thereof, of BAFF. In another preferred embodiment, the BAFF polypeptide comprises a polypeptide consisting of human BAFF (Figure 9a; SEQ ID NO: 1) amino acid residues 136 to 285, which binds to a BCMA-Fc fusion protein. In a preferred embodiment, the BAFF is human BAFF (Figures 9a and 9b; SEQ ID NO: 1; SEQ ID NO: 2). In another preferred embodiment, the crystallizable composition comprises a trimer of BAFF polypeptides.

A BAFF polypeptide could be a fusion protein comprising BAFF, or a portion thereof, and one or more other proteins. The fusion protein could comprise BAFF, or a portion thereof, and one or more epitope tags, such as a myc tag.

Crystal Structures and Methods Using the Structure Coordinates That Define the Three-Dimensional Structure of BAFF

The crystallizable compositions provided by this invention are amenable to X-ray crystallography. Therefore, this invention also encompasses crystals of the crystallizable compositions. This invention also provides the three-dimensional structure as obtained by X-ray crystallography of a BAFF polypeptide at high resolution, such as at 2.8Å resolution. See Example 1. In a preferred embodiment, the BAFF polypeptide is the extracellular domain of BAFF (for example, amino acids 136 to 285 of human BAFF (see Figure 9b; SEQ ID NO: 2; or Figure 9b; SEQ ID NO: 1)). In a preferred embodiment, the BAFF is human BAFF (see Figure 9a; SEQ ID NO: 1). The BAFF polypeptide is preferably one that can bind to at least one receptor of BAFF, i.e., the BAFF polypeptide comprises a binding site for at least one receptor of BAFF.

In a preferred embodiment, the BAFF or the APRIL described herein is human BAFF or human APRIL.

The three-dimensional structures of other crystallizable compositions of this invention may also be determined by X-ray crystallography using X-ray crystallographic techniques routine in the art.

X-ray crystallography is a collection of techniques which allow the determination of the structure of a molecular entity. The techniques include crystallization of the entity, collection and processing of X-ray diffraction intensities, determination of phases (by, e.g., multiple isomorphous replacement, molecular replacement or difference Fourier techniques) and model building and refinement.

The three-dimensional structure of the extracellular domain of BAFF polypeptide is defined by a set of structure coordinates as set forth in Figure 8. The term "structure coordinates" refers to Cartesian atomic coordinates derived from mathematical equations related to the patterns obtained on diffraction of a monochromatic beam of X-rays by the atoms (scattering centers) of an extracellular domain of a BAFF polypeptide in crystal form. The diffraction data are used to calculate an electron density map of the repeating unit of the crystal. The electron density maps are then used to establish the position of individual atoms of the extracellular domain of a BAFF polypeptide.

One embodiment of the present invention provides a molecule or a molecular complex defined by at least a portion or all of the structure coordinates of the BAFF polypeptide amino acids set forth in Figure 8, or a homologue of said molecule or said molecular complex, wherein said homologue has a root mean square deviation from the backbone atoms of said amino acids between 0.00Å and 1.50Å, preferably between 0.00Å and 1.00Å, more preferably between 0.00Å and 0.50Å.

Another embodiment of the present invention provides a molecule or a molecular complex comprising a first binding site defined by structure coordinates of at least one or a plurality of BAFF amino acids selected from the group consisting of His218, Val219, Phe220, Gly221, Asp222, Glu223, Leu224, Ser225, Leu226, Val227, Pro264, Arg265, Glu266, Gly161, Ser162, Tyr163, Ala151, Asp152, Ser153, Glu154, Thr155, Pro156, Leu240, Pro241, Asn242, Ser171 and Phe172 according to Figure

8; or a homologue of said molecule or molecular complex, wherein said homologue comprises a second binding site that has a root mean square deviation from the backbone atoms of said at least one or a plurality of BAFF amino acids between 0.00Å and 1.50Å, preferably between 0.00Å and 1.00Å, more preferably between 0.00Å and 0.50Å. The first or second binding site is preferably a binding site of BAFF for one or more receptors of BAFF.

Preferably, a certain embodiment of the present invention provides a molecule or a molecular complex comprising a first binding site defined by structure coordinates of at least four BAFF amino acids selected from the group consisting of His218, Val219, Phe220, Gly221, Asp222, Glu223, Leu224, Ser225, Leu226, Val227, Pro264, Arg265, Glu266, Gly161, Ser162, Tyr163, Ala151, Asp152, Ser153, Glu154, Thr155, Pro156, Leu240, Pro241, Asn242, Ser171 and Phe172 according to Figure 8; or a homologue of said molecule or molecular complex, wherein said homologue comprises a second binding site that has a root mean square deviation from the backbone atoms of said at least four BAFF amino acids between 0.00Å and 1.50Å, preferably between 0.00Å and 1.00Å, more preferably between 0.00Å and 0.50Å. The first or second binding site is preferably a binding site of BAFF for one or more receptors of BAFF.

Those of skill in the art will understand that a set of structure coordinates for a polypeptide is a relative set of points that define a shape in three dimensions. Thus, it is possible that an entirely different set of coordinates could define a similar or identical shape. Moreover, slight

variations in the individual coordinates will have little effect on overall shape.

The variations in coordinates discussed above may be generated due to mathematical manipulations of the structure coordinates. For example, the structure coordinates set forth in Figure 8 could be manipulated by crystallographic permutations of the structure coordinates, fractionalization of the structure coordinates, integer additions or subtractions to sets of the structure coordinates, inversion of the structure coordinates, or any combination thereof.

Alternatively, modification in the crystal structure due to mutations, additions, substitutions, and/or deletions of amino acids, or other changes in any of the components that make up the crystal, could also account for variations in structure coordinates. If such variations are within an acceptable standard error as compared to the original coordinates, the resulting three-dimensional shape is considered to be the same as that of the unmodified crystal.

Various computational analyses are therefore necessary to determine whether a molecule or molecular complex, or a portion thereof, is sufficiently similar to all or parts of the extracellular domain of BAFF polypeptide structure described herein as to be considered the same. Such analyses may be carried out in current software applications, such as the Molecular Similarity application of QUANTA (Molecular Simulations Inc., San Diego, CA) version 4.1, and as described in its accompanying User's Guide.

The Molecular Similarity application permits comparisons between different structures, different

conformations of the same structure, and different parts of the same structure. The procedure used in Molecular Similarity to compare structures is divided into four steps: 1) load the structures to be compared; 2) define the atom equivalences in these structures; 3) perform a fitting operation; and 4) analyze the results.

Each structure is identified by a name. One structure is identified as the target (i.e., the fixed structure); all remaining structures are working structures (i.e., moving structures). Since atom equivalency within QUANTA is defined by user input, for the purpose of this invention, equivalent atoms such as protein backbone atoms (N, Cα, C and O) will be defined for all conserved residues between the two structures being compared. Also, only rigid fitting operations will be considered.

When a rigid fitting method is used, the working structure is translated and rotated to obtain an optimum fit with the target structure. The fitting operation uses an algorithm that computes the optimum translation and rotation to be applied to the moving structure, such that the root mean square difference of the fit over the specified pairs of equivalent atom is an absolute minimum. This number, given in angstroms, is reported by QUANTA.

For the purpose of this invention, any molecule or molecular complex that has a root mean square deviation of conserved residue backbone atoms (N, Cα, C, O) between 0.00Å and 1.50Å, preferably between 0.00Å and 1.00Å, more preferably between 0.00Å and 0.50Å, when superimposed on the relevant backbone

atoms described by structure coordinates listed in Figure 8 are considered identical.

The terms "root mean square deviation", "r. m. s. deviation" or "r. m. s. positional deviation" mean the square root of the arithmetic mean of the squares of the deviations from the mean. It is a way to express the deviation or variation from a trend or object. For purposes of this invention, the "root mean square deviation" defines the variation in the backbone of a protein from the relevant portion of the backbone of the BAFF polypeptide as defined by the structure coordinates described herein.

Once the structure coordinates of a protein crystal have been determined, they are useful in solving the structures of other crystals.

In accordance with the present invention, the structure coordinates of a molecule or molecular complex comprising the extracellular domain of BAFF polypeptide is stored in a machine-readable storage medium. A machine could be a computer. Such data may be used for a variety of purposes, such as drug discovery, and X-ray crystallographic analysis of other protein crystals.

In order to use the structure coordinates generated for the BAFF molecule or molecular complex or one of its binding sites or homologues thereof, it is necessary to convert them into a three-dimensional shape. This is achieved through the use of commercially available software that is capable of generating a three-dimensional graphical representation of molecule or molecular complexes, or portions thereof, from a set of structure coordinates.

Commercially available graphical software programs including, but not limited to, O (Jones et al., Acta Cryst. A47: p. 110-9 (1991)) and INSIGHTII (© Accelrys, Inc. and Molecular Simulations, Inc., San Diego, CA) are capable of generating three-dimensional representations of molecules or molecular complexes, or portions thereof, from a set of structure coordinates.

Accordingly, one embodiment of this invention provides a machine-readable data storage medium comprising a data storage material encoded with machine-readable data comprising a portion of or the entire set of the structure coordinates set forth in Figure 8. A machine could be a computer. A computer which comprises the data storage medium is also provided by this invention. This invention also provides the computer with instructions to produce three-dimensional representations of the molecules or molecular complexes of BAFF by processing the machine-readable data of this invention. The computer of this invention further comprises a display for displaying the structure coordinates of this invention.

This invention also provides a computer for determining at least a portion, or all, of the structure coordinates corresponding to X-ray diffraction data obtained from a molecule or a molecular complex of BAFF, wherein said computer comprises:

a) a machine-readable data storage medium comprising a data storage material encoded with machine-readable data, wherein said data comprises at least a portion, or all, of the structure coordinates of BAFF polypeptide according to Figure 8;

b) a machine-readable data storage medium comprising a data storage material encoded with machine-readable data, wherein said data comprises X-ray diffraction data obtained from said molecule or molecular complex; and

c) instructions for performing a Fourier transform of the machine readable data of (a) and for processing said machine readable data of (b) into structure coordinates.

The computer of this invention further comprises a display for displaying the structure coordinates of this invention.

This invention also provides a computer for determining at least a portion of the structure coordinates corresponding to X-ray diffraction data of a molecule or a molecular complex whose structure is unknown, wherein said computer comprises:

a) a machine-readable data storage medium comprising a data storage material encoded with machine-readable data, wherein said data comprises at least a portion, or all, of the structure coordinates according to Figure 8;

b) a machine-readable data storage medium comprising a data storage material encoded with machine-readable data, wherein said data comprises an X-ray diffraction pattern of said molecule or molecular complex;

c) a working memory for storing instructions for processing said machine-readable data of a) and b);

d) a central processing unit coupled to said working memory and to said machine-readable data of a) and b) for performing a Fourier transform of the

machine readable data of (a) and for processing said machine readable data of (b) into structure coordinates; and

e) preferably a display coupled to said central processing unit for displaying said structure coordinates of said molecule of molecular complex. In one embodiment, the unknown structure is at least a portion of BAFF. In another embodiment, the unknown structure comprises an APRIL polypeptide. In a preferred embodiment, the unknown structure comprises the extracellular domain of APRIL. In a more preferred embodiment, the unknown structure comprises a trimer of APRIL polypeptides.

This invention further provides a computer for producing a three-dimensional representation of:

a) a molecule or a molecular complex defined by at least a portion or all of the structure coordinates of the BAFF amino acids set forth in Figure 8, or

b) a homologue of said molecule or molecular complex, wherein said homologue has a root mean square deviation from the backbone atoms of said amino acids of between 0.00Å than 1.50Å, preferably between 0.00Å and 1.00Å, more preferably between 0.00Å and 0.50Å; and wherein said computer comprises:

(i) a machine-readable data storage medium comprising a data storage material encoded with machine-readable data, wherein said data comprises at least a portion or all of the structure coordinates of all of the BAFF amino acids set forth in Figure 8; and

(ii) instructions for processing said machine-readable data into said three-dimensional representation.

This invention also provides a computer for producing a three-dimensional representation of:

a) a molecule or molecular complex comprising a first binding site defined by structure coordinates of at least one or a plurality of BAFF amino acids selected from the group consisting of His218, Val219, Phe220, Gly221, Asp222, Glu223, Leu224, Ser225, Leu226, Val227, Pro264, Arg265, Glu266, Gly161, Ser162, Tyr163, Ala151, Asp152, Ser153, Glu154, Thr155, Pro156, Leu240, Pro241, Asn242, Ser171 and Phe172 according to Figure 8; or

b) a homologue of said molecule or molecular complex, wherein said homologue comprises a second binding site that has a root mean square deviation from the backbone atoms of said at least one or a plurality of BAFF amino acids of between 0.00Å and 1.50Å, preferably between 0.00Å and 1.00Å, more preferably between 0.00Å and 0.50Å;

wherein said computer comprises:

(i) a machine-readable data storage medium comprising a data storage material encoded with machine-readable data, wherein said data comprises the structure coordinates of at least one or a plurality of BAFF amino acids selected from the group consisting of His218, Val219, Phe220, Gly221, Asp222, Glu223, Leu224, Ser225, Leu226, Val227, Pro264, Arg265, Glu266, Gly161, Ser162, Tyr163, Ala151, Asp152, Ser153, Glu154, Thr155, Pro156, Leu240, Pro241, Asn242, Ser171 and Phe172 according to Figure 8; and

(ii) instructions for processing said machine-readable data into said three-dimensional representation.

This invention also provides a computer for producing a three-dimensional representation of:

c) a molecule or molecular complex comprising a first binding site defined by structure coordinates of at least four BAFF amino acids selected from the group consisting of His218, Val219, Phe220, Gly221, Asp222, Glu223, Leu224, Ser225, Leu226, Val227, Pro264, Arg265, Glu266, Gly161, Ser162, Tyr163, Ala151, Asp152, Ser153, Glu154, Thr155, Pro156, Leu240, Pro241, Asn242, Ser171 and Phe172 according to Figure 8; or

d) a homologue of said molecule or molecular complex, wherein said homologue comprises a second binding site that has a root mean square deviation from the backbone atoms of said at least four BAFF amino acids of between 0.00Å and 1.50Å, preferably between 0.00Å and 1.00Å, more preferably between 0.00Å and 0.50Å;

wherein said computer comprises:

(i) a machine-readable data storage medium comprising a data storage material encoded with machine-readable data, wherein said data comprises the structure coordinates of at least four BAFF amino acids selected from the group consisting of His218, Val219, Phe220, Gly221, Asp222, Glu223, Leu224, Ser225, Leu226, Val227, Pro264, Arg265, Glu266, Gly161, Ser162, Tyr163, Ala151, Asp152, Ser153, Glu154, Thr155, Pro156, Leu240, Pro241, Asn242, Ser171 and Phe172 according to Figure 8; and

(ii) instructions for processing said machine-readable data into said three-dimensional representation.

Preferably, the computer of this invention further comprises a display (which could be a computer screen) for displaying the structure coordinates of this invention. The first or the second binding site could be, inter alia, a binding site of BAFF for one or more receptors of BAFF.

Figure 5 demonstrates one version of these embodiments. System 10 includes a computer 11 comprising a central processing unit ("CPU") 20, a working memory 22 which may be, e.g., RAM (random-access memory) or "core" memory, mass storage memory 24 (such as one or more disk drives or CD-ROM or DVD-ROM drives), one or more cathode-ray tube ("CRT") display terminals 26, one or more keyboards 28, one or more input lines 30, and one or more output lines 40, all of which are interconnected by a conventional bidirectional system bus 50.

Input hardware 36, coupled to computer 11 by input lines 30, may be implemented in a variety of ways. Machine-readable data of this invention may be inputted via the use of a modem or modems 32 connected by a telephone line or dedicated data line 34. Alternatively or additionally, the input hardware 35 may comprise CD-ROM or DVD-ROM drives or disk drives 24. In conjunction with display terminal 26, keyboard 28 may also be used as an input device.

Output hardware 46, coupled to computer 11 by output lines 40, may similarly be implemented by conventional devices. By way of example, output

hardware 46 may include CRT display terminal 26 for displaying a graphical representation of a binding site of this invention using a program such as QUANTA as described herein. Output hardware might also include a printer 42, so that hard copy output may be produced, or a disk drive 24, to store system output for later use.

In operation, CPU 20 coordinates the use of the various input and output devices 36, 46, coordinates data accesses from mass storage 24 and accesses to and from working memory 22, and determines the sequence of data processing steps. A number of programs may be used to process the machine-readable data of this invention. Such programs are discussed in reference to the computational methods of drug discovery as described herein. Specific references to components of the hardware system 10 are included as appropriate throughout the following description of the data storage medium.

Figure 6 shows a cross-section of a magnetic data storage medium 100 which can be encoded with machine-readable data that can be carried out by a system such as system 10 of Figure 5. Medium 100 can be a conventional floppy diskette or hard disk, having a suitable substrate 101, which may be conventional, and a suitable coating 102, which may be conventional, on one or both sides, containing magnetic domains (not visible) whose polarity or orientation can be altered magnetically. Medium 100 may also have an opening (not shown) for receiving the spindle of a disk drive or other data storage device such as mass storage 24 of Figure 5.

The magnetic domains of coating 102 of medium 100 are polarized or oriented so as to encode in a manner which may be conventional, machine readable data such as that described herein, for execution by a system such as system 10 of Figure 5.

Figure 7 shows a cross-section of an optically-readable data storage medium 110 which also can be encoded with such machine-readable data, or a set of instructions, which can be carried out by a system such as system 10 of Figure 5. Medium 110 can be a conventional compact disk or DVD disk read only memory (CD-ROM or DVD-ROM) or a rewritable medium, such as a magneto-optical disk which is optically readable and magneto-optically writable. Medium 100 preferably has a suitable substrate 111, which may be conventional, and a suitable coating 112, which may be conventional, usually of one side of substrate 111.

In the case of CD-ROM, as is well known, coating 112 is reflective and is impressed with a plurality of pits 113 to encode the machine-readable data. The arrangement of pits is read by reflecting laser light off the surface of coating 112. A protective coating 114, which preferably is substantially transparent, is provided on top of coating 112.

In the case of a magneto-optical disk, as is well known, coating 112 has no pits 113, but has a plurality of magnetic domains whose polarity or orientation can be changed magnetically when heated above a certain temperature, as by a laser (not shown). The orientation of the domains can be read by measuring the polarization of laser light reflected from coating

112. The arrangement of the domains encodes the data as described above.

For the first time, the present invention permits the use of structure-based and rational drug design techniques to design, select, and synthesize chemical entities and compounds, such as agonists or antagonists of BAFF. Additionally, the present invention permits the use of structure-based or rational drug design techniques to make improvements of conventional BAFF agonists or antagonists, that are capable of binding to the extracellular domain of BAFF.

One particularly useful drug design technique enabled by this invention is iterative drug design. Iterative drug design is a method for optimizing associations between a protein and a compound (that compound includes an antibody) by determining and evaluating the three-dimensional structures of successive sets of protein/compound complexes.

Those of skill in the art will realize that association of natural receptors or substrates with the binding sites of their corresponding ligand (such as BAFF) or enzymes is the basis of many biological mechanisms of action. Similarly, many drugs (which include monoclonal antibodies) exert their biological effects through association with the binding sites of, for example, ligands (such as BAFF), receptors (such as one of the receptors of BAFF) and enzymes. Such associations may occur with all or any parts of the binding sites. An understanding of such associations will help lead to the design of drugs having more favorable associations with their target ligand (such as BAFF), receptor or enzyme, and thus, improved

biological effects. Therefore, this information is valuable in designing potential chemical entities or synthetic compounds that bind the ligands (such as BAFF), receptors or enzymes. Such synthetic compounds could act as agonists or antagonists of the ligands (such as BAFF), receptors or enzymes.

The term "binding site", as used herein, refers to a region of a protein, that, as a result of its shape, favorably associates with, inter alia, another protein, a chemical entity, a synthetic compound or an antibody, or an antigen binding fragment thereof. For example, BAFF has a binding site for each of its three known receptors, BCMA, TACI and BAFF-R.

This invention also provides a method of determining a binding site of BAFF for one or more receptors of BAFF. In one embodiment, the binding site of BAFF for one or more of its receptors is determined based on the location of the binding site of known, homologous TNF family members for their receptors. See, e.g., Example 1. In a preferred embodiment, the binding site of BAFF for one or more receptors of BAFF is determined by a method comprising the steps of:

a) generating by biochemical means biochemical structure-function data, said data comprising one or more amino acid residues of BAFF that when mutated results in a reduction in binding between BAFF and one or more of the receptors of BAFF (i.e., said data, for example, show that mutation of one or more particular amino acid residues of BAFF results in reduction in binding between BAFF and one or more receptors of BAFF); and

b) using said data to define amino acid residues of the BAFF structure coordinates according to Figure 8 that interact with one or more receptors of BAFF.

In a more preferred embodiment, the binding site of BAFF for one or more of its receptors is determined by determining the co-crystal structure of BAFF, or a portion thereof that binds to a receptor of BAFF, and one of its receptors, or a portion of that receptor that binds to BAFF. The binding site of BAFF for all of its receptors can be determined by determining the co-crystal structures of BAFF and each of its receptors.

In iterative drug design, crystals of a series of protein complexed with a compound, chemical entity or another protein that binds the protein are obtained and then the three-dimensional structure of each molecule or molecular complex is solved. Such an approach provides insight into the association between the proteins and compounds or chemical entities of each complex. This is accomplished by selecting proteins, compounds or chemical entities with agonistic or antagonistic activity, obtaining crystals of this new protein/protein, compound or chemical entity complex, solving the three-dimensional structure of the complex, and comparing the associations between the new protein/protein, compound or chemical entity complex and previously solved protein/protein, compound or chemical entity complexes. By observing how changes in the protein, compound or chemical entity affect the protein/protein, compound or chemical entity associations, these associations may be optimized.

In some cases, iterative drug design is carried out by forming successive protein/protein, protein/compound or protein/chemical entity complexes and then crystallizing each new complex. Alternatively, a pre-formed protein crystal is soaked in the presence of another protein, a compound or a chemical entity, thereby forming a protein/protein, protein/compound or protein/chemical entity complexes complex and obviating the need to crystallize each individual complex.

The structure coordinates of BAFF set forth in Figure 8 can also be used to aid in obtaining structural information about another crystallized molecule or molecular complex. This may be achieved by any of a number of well-known techniques, including molecular replacement. This method is especially useful for determining the structures of BAFF mutants and homologues, one homologue being APRIL.

The structure coordinates set forth in Figure 8 can also be used to generate homology models of proteins having 30% or higher homology thereto. A homology model of human APRIL, generated using the structure coordinates of BAFF shown in Figure 8, is detailed in Example 2.

Accordingly, this invention provides a method of utilizing the structure coordinates of BAFF to obtain a homology model structure of a molecule (or molecular complex) whose structure is unknown and at least a portion of whose structure is similar to the structure of BAFF (one such molecule being APRIL), comprising the step of:

applying at least a portion (or all) of the structure coordinates set forth in Figure 8 to generate a three-dimensional molecular model of at least a portion (or all) of the molecule whose structure is unknown, to generate a homology model structure of that molecule. In one embodiment, the unknown structure is at least a portion of BAFF. In another embodiment, the unknown structure comprises an APRIL polypeptide. In a preferred embodiment, the unknown structure comprises the extracellular domain of APRIL. In a more preferred embodiment, the unknown structure comprises a trimer of APRIL polypeptides.

This invention also provides a computer for producing a three-dimensional representation of:

a) a homology model structure of at least a portion or all of a molecule or molecular complex whose structure is unknown and at least a portion of whose structure is similar to the structure of BAFF, wherein said homology model structure is defined by at least a portion of (or all) the homology model structure coordinates of all the APRIL amino acids set forth in Figure 10;

wherein said computer comprises:

(i) a machine-readable data storage medium comprising a data storage material encoded with machine-readable data, wherein said data comprises at least a portion of the structure coordinates of all of the APRIL amino acids set forth in Figure 10; and

(ii) instructions for processing said machine-readable data into said three-dimensional representation.

The computer described above can further comprise a display for displaying said homology-model structure coordinates.

The structure coordinates set forth in Figure 8 can also be used for determining at least a portion of the three-dimensional structure of molecules or molecular complexes which contain at least some structural features similar to at least a portion of BAFF. In particular, structural information about another crystallized molecule or molecular complex may be obtained. This may be achieved by any of a number of well-known techniques, including molecular replacement.

Therefore, another embodiment of this invention provides a method of utilizing molecular replacement to obtain structural information about a crystallized molecule or molecular complex whose structure is unknown comprising the steps of:

a) generating an X-ray diffraction pattern from said crystallized molecule or molecular complex; and

b) applying at least a portion of the structure coordinates set forth in Figure 8 to the X-ray diffraction pattern to generate a three-dimensional electron density map of the molecule or molecular complex whose structure is unknown.

Preferably, the crystallized molecule or molecular complex comprises a BAFF polypeptide. In another preferred embodiment, the crystallized molecule or molecular complex comprises an APRIL polypeptide.

By using molecular replacement, all or part of the structure coordinates of the extracellular

domain of BAFF provided by this invention (and set forth in Figure 8) can be used to determine the structure of a crystallized molecule or molecular complex whose structure is unknown more rapidly and efficiently than attempting to determine such information ab initio. This method is especially useful in determining the structure of BAFF mutants and homologues, one such homologue being APRIL.

Molecular replacement provides an accurate estimation of the phases for an unknown structure. Phases are a factor in equations used to solve crystal structures that cannot be determined directly. Obtaining accurate values for the phases, by methods other than molecular replacement, is a time-consuming process that involves iterative cycles of approximations and refinements and greatly hinders the solution of crystal structures. However, when the crystal structure of a protein containing at least a homologous portion has been solved, the phases from the known structure provide a satisfactory estimate of the phases for the unknown structure.

Thus, molecular replacement involves generating a preliminary model of a molecule or molecular complex whose structure coordinates are unknown, by orienting and positioning the relevant portion of the extracellular domain of BAFF according to Figure 8 within the unit cell of the crystal of the unknown molecule or molecular complex, so as best to account for the observed X-ray diffraction pattern of the crystal of the molecule or molecular complex whose structure is unknown. Phases can then be calculated from this model and combined with the observed X-ray

diffraction pattern amplitudes to generate an electron density map of the structure whose coordinates are unknown. This, in turn, can be subjected to any well-known model building and structure refinement techniques to provide a final, accurate structure of the unknown crystallized molecule or molecular complex [E. Lattman, "Use of the Rotation and Translation Functions", in Meth. Enzymol., 115, pp. 55-77 (1985); M. G. Rossmann, ed., "The Molecular Replacement Method", Int. Sci. Rev. Ser., No. 13, Gordon & Breach, New York (1972)].

The structure of any portion of any crystallized molecule or molecular complex that is sufficiently homologous to any portion of the extracellular domain of BAFF can be solved by this method. The term "sufficiently homologous to any portion of the extracellular domain of BAFF" refers to a protein or section thereof that has a sequence homology of at least 25% compared to any portion of the extracellular domain of BAFF. In one embodiment, the sequence homology is at least 30%. In one embodiment, the sequence homology is at least 40%.

In a preferred embodiment, the method of molecular replacement is utilized to obtain structural information about a molecule or a molecular complex, wherein the molecule or molecular complex comprises a BAFF-like polypeptide. Preferably the BAFF-like polypeptide is BAFF, a mutant thereof or a homologue thereof, one such homologue being APRIL.

The structure coordinates of the extracellular domain of a BAFF as provided by this invention are particularly useful in solving the

structure of other crystal forms of BAFF-like polypeptide, preferably other crystal forms of BAFF; BAFF-like polypeptide, preferably the extracellular domain of BAFF, or a BAFF-like polypeptide; or complexes comprising any of the above. APRIL is a BAFF-like polypeptide.

Such structure coordinates are also particularly useful to solve the structure of crystals of BAFF-like polypeptide, particularly the extracellular domain of BAFF co-complexed with one or more of its receptors, a variety of chemical entities, a compound, such as an agonist or antagonist of BAFF, or a variant of an agonist or antagonist of BAFF. This approach enables the determination of the optimal sites for interaction between chemical entities, interaction of candidate BAFF agonists or antagonists with BAFF, or interaction of a variant of a BAFF agonist or antagonist, and the extracellular domain of BAFF. For example, high resolution X-ray diffraction data collected from crystals exposed to different types of solvent allows determination of the location where each type of solvent molecule resides. Small molecules that bind tightly to these sites can then be designed and synthesized and tested for their BAFF agonist or antagonist activity.

All of the molecules or molecular complexes referred to above may be studied using well-known X-ray diffraction techniques and may be refined versus 1.5-3.5 Å resolution X-ray data to an R-working value of about 0.25 or less using computer software, such as X-PLOR (Yale University, ©1992, distributed by Molecular Simulations, Inc.; see, e.g., Blundell & Johnson,

supra; Meth. Enzymol., vol. 114 & 115, H. W. Wyckoff et al., eds., Academic Press (1985)). This information may thus be used to optimize BAFF agonists or antagonists, and more importantly, to design new or improved BAFF agonists or antagonists. A BAFF agonist or antagonist may be an antibody, or an antigen binding fragment thereof.

A chemical entity or a compound (including an agonist or antagonist of BAFF), as well as variants of BAFF agonists or antagonists, which could be an antibody, or an antigen binding fragment thereof, or another protein, can be designed by computational means by performing fitting operations. A compound could be a macromolecule, such as a protein or a polypeptide.

The present invention also encompasses methods of evaluating the potential of a chemical entity to associate with a molecule or molecular complex of this invention, or a homologue of said molecule or molecular complex.

This invention provides a method for evaluating the potential of a chemical entity to associate with:

a) a molecule or molecular complex defined by at least a portion or all of the structure coordinates of the BAFF amino acids, set forth in Figure 8; or

b) a homologue of said molecule or molecular complex having a root mean square deviation from the backbone atoms of said amino acids of between 0.00Å and 1.50Å, preferably between 0.00Å and 1.00Å, more preferably between 0.00Å and 0.50Å;

comprising the steps of:

(i) employing computational means to perform a fitting operation between said chemical entity and said molecule or molecular complex or between said chemical entity and a homologue of said molecule or molecular complex; and

(ii) analyzing the results of said fitting operation to quantify the association between said chemical entity and said molecule or molecular complex or said homologue of said molecule or molecular complex. In this method, the molecule or molecular complex, or the homologue of the molecule or molecular complex, preferably comprises a binding site; said binding site could be a binding site of BAFF for one or more of its receptors. The fitting operation in (i) above could be between said chemical entity and the binding site of the molecule or molecular complex or the binding site of the homologue of the molecule or molecular complex. The association in (ii) could be the association between said chemical entity and the binding site of the molecule or molecular complex or the binding site of the homologue of the molecule or molecular complex.

This invention also provides a method for evaluating the potential of a chemical entity to associate with:

a) a molecule or molecular complex comprising a first binding site defined by at least one (preferably at least four) or a plurality of BAFF amino acids selected from the group consisting of His218, Val219, Phe220, Gly221, Asp222, Glu223, Leu224, Ser225, Leu226, Val227, Pro264, Arg265, Glu266, Gly161, Ser162, Tyr163, Ala151, Asp152, Ser153, Glu154, Thr155, Pro156,

Leu240, Pro241, Asn242, Ser171 and Phe172 according to Figure 8; or

b) a homologue of said molecule or molecular complex comprising a second binding site having a root mean square deviation from the backbone atoms of said at least one (preferably at least four) or a plurality of BAFF amino acids between 0.00Å and 1.50Å, preferably between 0.00Å and 1.00Å, more preferably between 0.00Å and 0.50Å;

comprising the steps of:

(i) employing computational means to perform a fitting operation between said chemical entity and said first binding site or said second binding site; and

(ii) analyzing the results of said fitting operation to quantify the association between said chemical entity and said first binding site or said second binding site.

Preferably, the first binding site or the second binding site is a binding site of BAFF for one or more receptors of BAFF.

As determined by homology to other TNF family members (see Example 1), the binding site of BAFF for one or more of its receptors comprises a plurality of amino acid residues selected from the group consisting of His218, Val219, Phe220, Gly221, Asp222, Glu223, Leu224, Ser225, Leu226, Val227, Pro264, Arg265, Glu266, Gly161, Ser162, Tyr163, Ala151, Asp152, Ser153, Glu154, Thr155, Pro156, Leu240, Pro241, Asn242, Ser171 and Phe172.

Also, as determined by homology to other TNF family members (see Example 1), the binding site of

BAFF for one or more of its receptors comprises at least one (preferably at least four) amino acid residues selected from the group consisting of His218, Val219, Phe220, Gly221, Asp222, Glu223, Leu224, Ser225, Leu226, Val227, Pro264, Arg265, Glu266, Gly161, Ser162, Tyr163, Ala151, Asp152, Ser153, Glu154, Thr155, Pro156, Leu240, Pro241, Asn242, Ser171 and Phe172.

The present invention also encompasses a method for identifying a potential agonist of BAFF comprising the steps of:

a) using at least a portion or all of the structure coordinates of the amino acids of BAFF according to Figure 8 ± a root mean square deviation from the backbone atoms of said BAFF amino acids between 0.00Å and 1.50Å, preferably between 0.00Å and 1.00Å, more preferably between 0.00Å and 0.50Å, to generate a three-dimensional structure of a molecule or a molecular complex;

b) employing said three-dimensional structure to design or select said potential agonist;

c) synthesizing said potential agonist; and

d) contacting said potential agonist with BAFF to determine the ability of said potential agonist to interact with BAFF.

The present invention also encompasses a method for identifying a potential antagonist of BAFF comprising the steps of:

a) using at least a portion or all of the structure coordinates of the amino acids of BAFF according to Figure 8 ± a root mean square deviation from the backbone atoms of said BAFF amino acids between 0.00Å and 1.50Å, preferably between 0.00Å and

1.00Å, more preferably between 0.00Å and 0.50Å, to generate a three-dimensional structure of a molecule or a molecular complex;

b) employing said three-dimensional structure to design or select said potential antagonist;

c) synthesizing said potential antagonist; and

d) contacting said potential antagonist with BAFF to determine the ability of said potential antagonist to interact with BAFF.

The molecule or molecular complex preferably comprises a binding site; said binding site could be a binding site of BAFF for one or more of its receptors.

This method could further comprise the step of:

e) determining whether said potential antagonist interrupts the interaction between BAFF and one of its receptors.

This invention also provides a method for identifying a potential antagonist of BAFF comprising the steps of:

a) using the structure coordinates of at least one (preferably at least four) or a plurality of BAFF amino acids selected from the group consisting of His218, Val219, Phe220, Gly221, Asp222, Glu223, Leu224, Ser225, Leu226, Val227, Pro264, Arg265, Glu266, Gly161, Ser162, Tyr163, Ala151, Asp152, Ser153, Glu154, Thr155, Pro156, Leu240, Pro241, Asn242, Ser171 and Phe172 according to Figure 8 or ± a root mean square deviation from the backbone atoms of said at least one (preferably at least four) or a plurality of BAFF amino acids between 0.00Å and 1.50Å, preferably between 0.00Å

and 1.00Å, more preferably between 0.00Å and 0.50Å, to generate a three-dimensional structure of a molecule or a molecular complex comprising a binding site;

b) employing said three-dimensional structure to design or select said potential antagonist;

c) synthesizing said potential antagonist; and

d) contacting said potential antagonist with BAFF to determine the ability of said potential antagonist to interact with BAFF.

The binding site in step a) could be a binding site of BAFF for one or more of its receptors.

This method could further comprise the step of:

e) determining whether said potential antagonist interrupts the interaction between BAFF and one of its receptors or activates BAFF.

This invention also provides a method for identifying a potential agonist of BAFF comprising the steps of:

a) using the structure coordinates of at least one (preferably at least four) or a plurality of BAFF amino acids selected from the group consisting of His218, Val219, Phe220, Gly221, Asp222, Glu223, Leu224, Ser225, Leu226, Val227, Pro264, Arg265, Glu266, Gly161, Ser162, Tyr163, Ala151, Asp152, Ser153, Glu154, Thr155, Pro156, Leu240, Pro241, Asn242, Ser171 and Phe172 according to Figure 8 or ± a root mean square deviation from the backbone atoms of said at least one (preferably at least four) or a plurality of BAFF amino acids between 0.00Å and 1.50Å, preferably between 0.00Å and 1.00Å, more preferably between 0.00Å and 0.50Å, to

generate a three-dimensional structure of a molecule or a molecular complex comprising a binding site;

b) employing said three-dimensional structure to design or select said potential agonist;

c) synthesizing said potential antagonist; and

d) contacting said potential agonist with BAFF to determine the ability of said potential agonist to interact with BAFF.

The binding site in step a) could be a binding site of BAFF for one or more of its receptors.

A potential agonist or a potential antagonist of BAFF is a compound. A compound could be a macromolecule, such as a protein or a polypeptide.

This invention also encompasses methods for evaluating the potential of a variant of an agonist or an antagonist of BAFF to associate with:

a) a molecule or a molecular complex defined by at least a portion or all of the structure coordinates of the BAFF amino acids, set forth in Figure 8; or

b) a homologue of said molecule or molecular complex having a root mean square deviation from the backbone atoms of said amino acids of between 0.00Å and 1.50Å, preferably between 0.00Å and 1.00Å, more preferably between 0.00Å and 0.50Å;

comprising the steps of:

(i) employing computational means to perform a fitting operation between the variant and said molecule or molecular complex or said homologue of said molecule or molecular complex; and

(ii) analyzing the results of said fitting operation to quantify the association between said variant and said molecule or molecular complex or between said variant and said homologue of said molecule or molecular complex.

The molecule or molecular complex or the homologue of the molecule or molecular complex preferably comprises a binding site; said binding site could be a binding site of BAFF for one or more of its receptors.

This invention also provides a method for evaluating the potential of a variant of an agonist or an antagonist of BAFF, to associate with:

a) a first binding site of a molecule or a molecular complex defined by structure coordinates of at least one (preferably at least four) or a plurality of BAFF amino acids selected from the group consisting of His218, Val219, Phe220, Gly221, Asp222, Glu223, Leu224, Ser225, Leu226, Val227, Pro264, Arg265, Glu266, Gly161, Ser162, Tyr163, Ala151, Asp152, Ser153, Glu154, Thr155, Pro156, Leu240, Pro241, Asn242, Ser171 and Phe172, set forth in Figure 8; or

b) a homologue of said molecule or molecular complex comprising a second binding site having a root mean square deviation from the backbone atoms of said at least one (preferably at least four) or a plurality of BAFF amino acids between 0.00Å and 1.50Å, preferably between 0.00Å and 1.00Å, more preferably between 0.00Å and 0.50Å;

comprising the steps of:

(i) employing computational means to perform a fitting operation between the variant and

said first binding site or said second binding site; and

(ii) analyzing the results of said fitting operation to quantify the association between said variant and said first binding site or said second binding site. Preferably, the first binding site in step a) or the second binding site in step b) is a binding site of BAFF for one or more of the receptors of BAFF. The fitting operation in (i) above could be between said variant and the binding site of the molecule or molecular complex or the binding site of the homologue of the molecule or molecular complex. The association in (ii) could be the association between said variant and the binding site of the molecule or molecular complex or the binding site of the homologue of the molecule or molecular complex.

Thus, the present invention provides BAFF agonist or antagonist variants with improved properties, such as increased or decreased binding affinity for BAFF.

The present invention also encompasses the chemical entities, agonists or antagonists of BAFF, variants of a BAFF agonist or antagonist, as well as compositions, such as pharmaceutical compositions, comprising the chemical entities, agonists or antagonists of BAFF, variants of a BAFF agonist or antagonist, identified by these methods.

For the first time, the present invention permits the use of molecular design techniques to design, select and synthesize chemical entities, compounds, including agonists or antagonists of BAFF, and variants of BAFF agonists or antagonists.

The design of chemical entities, compounds, including agonists or antagonists of BAFF, and variants of BAFF agonists or antagonists according to this invention generally involves consideration of two factors. First, chemical entities, compounds, including agonists or antagonists of BAFF, and variants of BAFF agonists or antagonists must be capable of physically and structurally associating with BAFF. Non-covalent molecular interactions important in the association of a protein, such as BAFF, with its binding partner include hydrogen bonding, van der Waals and hydrophobic interactions.

Second, the chemical entities, compounds, including agonists or antagonists of BAFF, and variants of BAFF agonists or antagonists must be able to assume a conformation that allows them to associate with BAFF directly. Although certain portions of chemical entities, compounds, including agonists or antagonists of BAFF, and variants of BAFF agonists or antagonists will not directly participate in these associations, those portions of chemical entities, compounds, including agonists or antagonists of BAFF, and variants of a BAFF agonist or antagonist may still influence the overall conformation of the molecule. This, in turn, may have a significant impact on potency. Such conformational requirements include the overall three-dimensional structure and orientation of the chemical entities, compounds, including agonists or antagonists of BAFF, and variants in relation to all or a portion of the binding site, e.g., active site or accessory binding site of BAFF, or the spacing between functional

groups of a compound comprising several chemical entities that directly interact with BAFF.

The potential binding effect on BAFF of a chemical entity, a compound, including an agonist or antagonist of BAFF, and a variant of a BAFF agonist or antagonist can be analyzed prior to its actual synthesis or generation and testing by the use of computer modeling techniques. If the theoretical structure of the given entity or compound or variant suggests insufficient interaction and association with BAFF, synthesis and testing of the entity or compound or generation and testing that particular variant is obviated. However, if computer modeling indicates a strong interaction, the entity, compound, including an agonist or antagonist of BAFF, or variant may then be generated and tested for its ability to bind to BAFF and interrupt its association with one or more BAFF receptors using the assays described below. In this manner, generation of undesired or inoperative entities, compounds, including agonists or antagonists of BAFF, or variants may be avoided.

A BAFF-binding entity, compound, including an agonist or antagonist of BAFF, and variant of a BAFF agonist or antagonist can be computationally evaluated and designed by means of a series of steps in which chemical entities or fragments are screened and selected for their ability to associate with the binding sites of BAFF as defined in this invention. Likewise, a BAFF variant can be obtained. Examples of BAFF variants are: a BAFF variant that binds to only a subset of the receptors that bind BAFF; a BAFF variant that binds to a particular receptor of BAFF with higher

or lower affinity than the native BAFF protein. For instance, BCMA and BAFF-R has only one cysteine-rich domain ("CRD"). Mutations of residues of BAFF involved in binding to the second CRD of TACI should result in a BAFF variant that can bind to BCMA and BAFF-R, but not to TACI.

One skilled in the art can use one of several methods to screen chemical entities for their ability to associate with BAFF and more particularly with a binding site of BAFF. This process may begin by visual inspection of, for example, the binding site for a receptor of BAFF on the computer screen, based on the BAFF structure coordinates in Figure 8 generated from the machine-readable storage medium and the process of obtaining an exact binding site described herein. Selected chemical entities may then be positioned in a variety of orientations, or docked, within an individual binding site of BAFF, as defined supra (such as a binding site of BAFF for one of its receptors). Docking may be accomplished using software such as Quanta or Sybyl, followed by energy minimization and molecular dynamics with standard molecular mechanics forcefields, such as CHARMM and AMBER.

Specialized computer programs may also assist in the process of selecting chemical entities. These include, inter alia:

1. GRID (Goodford, P.J., "A Computational Procedure for Determining Energetically Favorable Binding Sites on Biologically Important Macromolecules", J. Med. Chem., 28, pp. 849-857 (1985)). GRID is available from Oxford University, Oxford, UK.

2. MCSS (Miranker, A. and M. Karplus, "Functionality Maps of Binding Sites: A Multiple Copy Simultaneous Search Method." Proteins:

Structure, Function and Genetics, 11, pp. 29-34 (1991)). MCSS is available from Molecular Simulations, Burlington, MA.

3. AUTODOCK (Goodsell, D.S. and A.J. Olsen, "Automated Docking of Substrates to Proteins by Simulated Annealing", Proteins: Structure, Function, and Genetics, 8, pp. 195-202 (1990)). AUTODOCK is available from Scripps Research Institute, La Jolla, CA.

4. DOCK (Kuntz, I.D. et al., "A Geometric Approach to Macromolecule-Ligand Interactions", J. Mol. Biol., 161, pp. 269-288 (1982)). DOCK is available from University of California, San Francisco, CA.

Once suitable chemical entities have been selected, they can be assembled into a single compound. Assembly may proceed by visual inspection of the relationship of the entities to each other on the three-dimensional image displayed on a computer screen in relation to the structure coordinates of BAFF. This is followed by manual model building using software such as Quanta or Sybyl.

The above-described evaluation process for chemical entities may be performed in a similar fashion for compounds that associate with BAFF or for variants of agonists and antagonists of BAFF.

Useful programs to aid one of skill in the art in connecting the individual chemical entities include:

1. CAVEAT (Bartlett, P.A. et al, "CAVEAT: A Program to Facilitate the Structure-Derived Design of Biologically Active Molecules". In "Molecular Recognition in Chemical and Biological Problems", Special Pub., Royal Chem. Soc., 78, pp. 182-196 (1989)). CAVEAT is available from the University of California, Berkeley, CA.

2. 3D Database systems such as MACCS-3D (MDL Information Systems, San Leandro, CA). This area is reviewed in Martin, Y.C., "3D Database Searching in Drug Design", J. Med. Chem., 35, pp. 2145-2154 (1992)).

3. HOOK (available from Molecular Simulations, Burlington, MA).

Instead of proceeding to build a BAFF agonist or antagonist or a BAFF binding compound in a step-wise fashion one chemical entity at a time, as described above, BAFF agonists or antagonists or other BAFF binding compounds, including variants of BAFF agonists or antagonists, may be designed as a whole or "de novo" using either an empty binding site (such as a binding site for one or more of the BAFF receptors) or optionally including some portion(s) of a known antagonist(s) of BAFF or a BAFF binding compound. These methods include:

1. LUDI (Bohm, H.-J., "The Computer Program LUDI: A New Method for the De Novo Design of Enzyme Inhibitors", J. Comp. Aid. Molec. Design, 6, pp. 61-78 (1992)). LUDI is available from Biosym Technologies, San Diego, CA.

2. LEGEND (Nishibata, Y. and A. Itai, Tetrahedron, 47, p. 8985 (1991)). LEGEND is available from Molecular Simulations, Burlington, MA.

3. LeapFrog (available from Tripos Associates, St. Louis, MO).

Other molecular modeling techniques may also be employed in accordance with this invention. See, e.g., Cohen, N.C. et al., "Molecular Modeling Software and Methods for Medicinal Chemistry," J. Med. Chem., 33, pp. 883-894 (1990). See also Navia, M.A. and M.A. Murcko, "The Use of Structural Information in Drug

Design", Current Opinions in Structural Biology, 2, pp. 202-210 (1992).

Once an entity, compound, including an agonist or antagonist of BAFF, or variant of agonists or antagonists of BAFF has been designed or selected by the above methods, the efficiency with which that entity, compound, including an agonist or antagonist of BAFF, or variant may bind to BAFF can be tested and optimized by computational evaluation. For example, a compound that has been designed or selected to function as a BAFF binding compound must also preferably traverse a volume not overlapping that occupied by the binding site when it is bound to the native BAFF. An effective BAFF binding compound must preferably demonstrate a relatively small difference in energy between its bound and free states (i.e., a small deformation energy of binding). Thus, the most efficient BAFF binding compound should preferably be designed with a deformation energy of binding of not greater than about 10 kcal/mole, preferably, not greater than 7 kcal/mole. BAFF binding compounds may interact with the BAFF in more than one conformation that is similar in overall binding energy. In those cases, the deformation energy of binding is taken to be the difference between the energy of the free compound and the average energy of the conformations observed when the compound binds to the protein.

A compound designed or selected as binding to BAFF may be further computationally optimized so that in its bound state it would preferably lack repulsive electrostatic interaction with the target protein. Such non-complementary (e.g., electrostatic)

interactions include repulsive charge-charge, dipole-dipole and charge-dipole interactions. Specifically, the sum of all electrostatic interactions between the compound and the protein when the compound is bound to BAFF, preferably make a neutral or favorable contribution to the enthalpy of binding.

Specific computer software is available in the art to evaluate compound deformation energy and electrostatic interaction. Examples of programs designed for such uses include: Gaussian 92, revision C (M.J. Frisch, Gaussian, Inc., Pittsburgh, PA ©1992); AMBER, version 4.0 (P.A. Kollman, University of California at San Francisco, ©1994); QUANTA/CHARMM (Molecular Simulations, Inc., Burlington, MA ©1994); and Insight II/Discover (Biosysm Technologies Inc., San Diego, CA ©1994). These programs may be implemented, for instance, using a Silicon Graphics workstation, IRIS 4D/35 or IBM RISC/6000 workstation model 550. Other hardware systems and software packages will be known to those skilled in the art.

Once a BAFF-binding compound has been optimally selected or designed, as described above, substitutions may then be made in some of its atoms or side groups to improve or modify its binding properties. Generally, initial substitutions are conservative, i.e., the replacement group will have approximately the same size, shape, hydrophobicity and charge as the original group. It should, of course, be understood that components known in the art to alter conformation should be avoided. Such substituted chemical compounds may then be analyzed for efficiency

of fit to BAFF by the same computer methods described in detail above.

Another approach made possible and enabled by this invention is computational screening of small molecule databases for chemical entities or compounds that can bind in whole, or in part, to BAFF; preferably to a binding site of BAFF for one or more of its receptors. In this screening, the quality of fit of such entities to the binding site may be judged either by shape complementarity or by estimated interaction energy. Meng, E.C. et al., J. Comp. Chem., 13, pp. 505-524 (1992).

The same methods described above for designing and obtaining chemical entities, compounds, including agonists or antagonists of BAFF, and variants of agonists or antagonists of BAFF can be employed to design and obtain BAFF variants.

Synthetic Compounds

The compounds of this invention can be synthetic compounds. In one embodiment, a synthetic compound designed by the methods of this invention has a molecular weight equal to or under about 1000 daltons. A synthetic compound designed by the methods of this invention preferably is soluble under physiological conditions. A synthetic compound designed by the methods of this invention preferably is bioavailable. A synthetic compound designed by the methods of this invention is preferably orally administrable. A synthetic compound designed by the methods of this invention preferably is able to bind its target (BAFF) when the target is present at

physiological concentrations. A synthetic compound designed by methods of this invention preferably is non-toxic or has a medically acceptable toxicity.

Assays for Confirming that the Novel Compounds Bind and Interrupt Interaction Between BAFF and One or More of Its Receptors

A person skilled in the art is aware of conventional assays for assessing whether the entities, compounds, including agonists or antagonists of BAFF, or variants of BAFF agonists or antagonists designed according to the methods of this invention, once made, bind specifically to BAFF and whether they interrupt the interaction between BAFF and one of its receptors or act as agonists of BAFF.

Conditions Associated with Inappropriate BAFF Induced Activation in a Subject

The chemical entities, compounds, including agonists or antagonists of BAFF, and variants of BAFF agonists or antagonists designed according to methods of this invention, as well as a composition, such as a pharmaceutical composition, comprising one or more chemical entities, compounds, including agonists or antagonists of BAFF, or variants, or combinations thereof, designed by methods of this invention, can be used to treat or prevent subjects having conditions associated with inappropriate or abnormal BAFF expression or activation, possibly in conjunction with one or more agents.

Examples of conditions associated with inappropriate or abnormal BAFF expression or activation in a subject, include, inter alia: systemic lupus erythematosis, lupus nephritis, lupus neuritis, asthma,

chronic obstructive pulmonary disease, bronchitis, emphysema, multiple sclerosis, uveitis, Alzheimer's disease, traumatic spinal cord injury, stroke, atherosclerosis, coronary restenosis, ischemic congestive heart failure, cirrhosis, hepatitis C, diabetic nephropathy, glomerulonephritis, osteoarthritis, rheumatoid arthritis, psoriasis, atopic dermatitis, systemic sclerosis, radiation-induced fibrosis, Crohn's disease, ulcerative colitis, multiple myeloma and cachexia.

Conditions associated with inappropriate or abnormal BAFF expression or activation in a subject, include, inter alia: cancer, autoimmune diseases, allergy, unwanted immune response, unwanted inflammatory response, rejection of donor tissue or organ, an inhibitor response to a therapeutic agent, such as a protein.

Subjects

The novel entities, compounds, including agonists or antagonists of BAFF, and variants of agonists or antagonists of BAFF designed according to this invention can be administered for treatment or prophylaxis of any mammalian subject suffering or about to suffer a condition associated with inappropriate BAFF expression or activation. Preferably, the subject is a primate, more preferably a higher primate, most preferably a human. In other embodiments, the subject may be a mammal of commercial importance, or a companion animal, or other animal of value, such as a member of an endangered species. Thus, a subject may be, inter alia, sheep, horses, cattle, goats, pigs,

dogs, cats, rabbits, guinea pigs, hamsters, gerbils, rats and mice.

Route of Administration

The novel entities, compounds, including agonists or antagonists of BAFF, and variants of agonists or antagonists of BAFF designed according to this invention may be administered in any manner which is medically acceptable. Depending on the specific circumstances, local or systemic administration may be desirable. Local administration may be, for example, by subconjunctival administration. Preferably, the novel entities, compounds, including agonists or antagonists of BAFF, and variants of agonists or antagonists of BAFF is administered via an oral, an enteral, or a parenteral route such as by an intravenous, intraarterial, subcutaneous, intramuscular, intraorbital, intraventricular, intraperitoneal, subcapsular, intracranial, intraspinal, topical or intranasal injection, infusion or inhalation. The novel entities, compounds, including agonists or antagonists of BAFF, and variants of agonists or antagonists of BAFF also may be administered by implantation of an infusion pump, or a biocompatible or bioerodible sustained release implant, into the subject.

Dosages and Frequency of Treatment

Generally, the methods described herein involve administration of the novel entities, compounds, including agonists or antagonists of BAFF, and variants of agonists or antagonists of BAFF designed according to methods of this invention at

desired intervals (e.g., daily, twice weekly, weekly, biweekly, monthly or at other intervals as deemed appropriate) over at least a two- or three-week period. The administration schedule is adjusted as needed to treat the condition associated with inappropriate or abnormal BAFF activation in the subject. The present treatment regime can be repeated in the event of a subsequent episode of illness.

The amount and frequency of dosing for any particular compound to be administered to a patient for inappropriate or abnormal BAFF expression or activation, or for a given immunological condition associated therewith, is within the skill and clinical judgment of ordinary practitioners of the medical and pharmaceutical arts. The general dosage and administration regime may be established by preclinical and clinical trials, which involve extensive but routine studies to determine the optimal administration parameters of the compound. Even after such recommendations are made, the practitioner will often vary these dosages for different subjects based on a variety of considerations, such as the individual's age, medical status, weight, sex, and concurrent treatment with other pharmaceuticals. Determining the optimal dosage and administration regime for each of the novel entity, compound, agonist or antagonist of BAFF used would be a routine matter for those of skill in the medical and pharmaceutical arts.

Generally, the frequency of dosing may be determined by an attending physician or similarly skilled practitioner, and might include periods of greater dosing frequency, such as at daily or weekly

intervals, alternating with periods of less frequent dosing, such as at monthly or longer intervals.

For treatment, a novel entity, compound, including an agonist or antagonist of BAFF, or variant of an agonist or antagonist of BAFF designed by methods of this invention can be formulated in a pharmaceutical or prophylactic composition which includes, respectively, a pharmaceutically or prophylactically effective amount thereof dispersed in a pharmaceutically acceptable carrier. In some embodiments, the pharmaceutical or prophylactic composition can also include a pharmaceutically or prophylactically effective amount of another medically beneficial compound.

Formulation

In general, chemical entities, compounds, including agonists or antagonists of BAFF, or variants of BAFF agonists or antagonists of this invention are suspended, dissolved or dispersed in a pharmaceutically acceptable carrier or excipient. The resulting therapeutic composition does not adversely affect the recipient's homeostasis, particularly electrolyte balance. Thus, an exemplary carrier comprises normal physiologic saline (0.15M NaCl, pH 7.0 to 7.4). Other acceptable carriers are well known in the art and are described, for example, in Remington's Pharmaceutical Sciences, Gennaro, ed., Mack Publishing Co., 1990. Acceptable carriers can include biocompatible, inert or bioabsorbable salts, buffering agents, oligo- or polysaccharides, polymers, viscoelastic compound such

as hyaluronic acid, viscosity-improving agents, preservatives, and the like.

A chemical entity, compound, including an agonist or antagonist of BAFF, or variant of a BAFF agonist or antagonist of this invention may be administered in a pharmaceutically effective, prophylactically effective or therapeutically effective amount, which is an amount sufficient to produce a detectable, preferably medically beneficial effect on a subject at risk or afflicted with a condition associated with inappropriate or abnormal BAFF expression or activation. Medically beneficial effects include preventing, inhibiting, reversing or attenuating deterioration of, or detectably improving, the subject's medical condition.

APRIL

As illustrated in Example 2 (in which a homology model of human APRIL amino acids 114 to 250 was built; see also Figure 10), a homology model of APRIL may be built based on the crystal structure coordinates of a BAFF polypeptide. Furthermore, the structure coordinates of a BAFF polypeptide may be used to solve the crystal structure of APRIL, as discussed herein. The three-dimensional structure of a binding site of APRIL for one or more of the receptors of APRIL may be determined using the methods described herein for the determination of a binding site of BAFF for one or more receptors of BAFF. A putative binding site of APRIL for its receptors is determined herein by one embodiment of this invention. The putative receptor binding site residues on human APRIL for one or more of

its receptors include Gly188, Arg189, Gln190, Glu191, Pro230, Arg231, Ala232, Ser131, Asp132, Val133, Pro122, Ile123, Asn124, Ala125, Thr126, Ser127, Arg206, Ala207, Tyr208, Ala141 and Leu142, and possibly other human APRIL amino acid residues. See Example 2. As in the case of BAFF, a computer for generating a three-dimensional representation of the binding site of APRIL for one or more of its receptors is included in this invention.

Once the three-dimensional structure of APRIL and a binding site of APRIL for one of the receptors of APRIL are obtained, they may be used to design and obtain chemical entities, compounds, such as agonists and antagonists of APRIL and variants of agonists or antagonists of APRIL, as well as compositions (including pharmaceutical compositions) comprising the entities, compounds, including agonists or antagonists of BAFF, or variants, by the same manner described herein for BAFF. Also, once the three-dimensional structure of a binding site of APRIL for one of the receptors of APRIL is obtained, it may be used to design and obtain novel APRIL proteins that can bind to a subset of its receptors, can bind to a receptor that it could not bind to before, and that can bind to a receptor of APRIL with higher or lower affinity than the native APRIL protein.

As in the case of BAFF, methods for generating APRIL variants and the variants themselves are included in this invention.

As in the case of BAFF, this invention includes molecules or molecular complexes defined by the structure coordinates of APRIL set forth in Figure

10 and molecules or molecular complexes comprising a binding site of APRIL (as detailed in Example 2) for one of its receptors. This invention also includes computers for producing three-dimensional representations of molecules or molecular complexes defined by the structure coordinates of APRIL set forth in Figure 10 and molecules or molecular complexes comprising a binding site of APRIL (as detailed in Example 2) for one of its receptors. This invention also includes methods of using the structures of molecules or molecular complexes defined by the structure coordinates of APRIL set forth in figure 10 and methods of using the structures of molecules or molecular complexes comprising a binding site of APRIL (as detailed in Example 2) for one of its receptors.

The following are **EXAMPLES** that illustrate the methods and compositions of this invention. These examples should not be construed as limiting: the examples are included for the purposes of illustration only.

All references cited herein are hereby incorporated by reference.

EXAMPLE 1 DETERMINATION OF THE CRYSTAL STRUCTURE OF A BAFF POLYPEPTIDE

The crystal structure of the TNF-homologous domain of human BAFF at 2.8 Å resolution is provided herein. The structure coordinates are shown in Figure 8.

A myc-tagged extracellular domain fragment of human BAFF (hBAFF) (residues 136-285) (see Figure 9b; SEQ ID NO: 2) was expressed in yeast cells, purified and crystallized.

Recombinant myc-hBAFF (residues Q136-L285 of BAFF with the myc sequence EQKLISEEDLNKEL (SEQ ID NO: 4) attached to the N-terminus) was cloned and expressed in yeast cells (Pichia pastoris). The protein was purified by anion exchange chromatography followed by gel filtration. Briefly, supernatant from Pichia cells was dialyzed; exchanged into a buffer of 10 mM Tris-HCl, pH 7.2; 50 mM NaCl; then loaded onto a Q column and eluted with a NaCl gradient (50 mM-500 mM). Further purification of myc-hBAFF was achieved by size exclusion chromatography using a Superdex 75 (26/70) column. The purified protein was analyzed by SDS-PAGE followed by Coomassie Blue staining, Western blot analysis using a mouse monoclonal 9E10 antibody (an anti-myc antibody), and N-terminal sequencing.

For crystallization, the protein was concentrated to 9 mg/ml in PBS buffer (150 mM sodium phosphate pH 7, 150 mM NaCl). Crystallization conditions were determined using the crystallization screening kits from Hampton Research (Liguna Niguel, CA). Crystals of optimal size were grown by vapor diffusion at 4°C in hanging drops made by mixing 3 µl of protein solution with 3 µl of reservoir solution of 8% PEG 4000, 0.1 M sodium acetate pH 4.5. The crystals, which were rod-shaped with hexagonal cross-section, having maximal dimensions 0.2 x 0.2 x 1 mm, grew within 3 to 7 days.

The crystals were cryoprotected by gradually equilibrating them in a solution containing 25% ethylene glycol, 12% PEG 4000, 0.1 M Na acetate pH 4.5, and then flash frozen in liquid nitrogen. Native X-ray diffraction data up to 3.3 Å resolution were collected

at -175°C on an R-axis IV detector system (Molecular Structure Corporation, Woodlands, TX) using Cu Kα radiation. The unit cell was hexagonal, with cell dimensions a = b = 122.12 Å, c=157.55 Å. Data processing with DENZO and SCALEPACK (Otwinowski, Z., Oscillation Data Reduction Program, Proceeding of the CCP4 study weekend: data collection and processing. Daresbury Laboratory, Warrington, UK: Sawer, L., Isaacs, N. & Bailey, S. eds. 56-62(1993)) indicated that the space group was $P6_1$ or its enantiomorph $P6_5$. The Matthews coefficient (Matthews, B.W., J.Mol.Biol., 33: p. 491-497 (1968)) was 2.83 Å ^{3}Da $^{-1}$ with a solvent content of 56.1%, indicating that there are two trimers of BAFF in the asymmetric unit. Data statistics are shown in Table 1.

The crystal structure was solved by multiple isomorphous replacement (MIR) and refined to 2.8 Å resolution. Attempts to solve the structure by molecular replacement with the program AMoRe (Navaja, J., AMoRe: an Automated Package for Molecular Replacement, Acta Crystallogr. A, 50: p. 157-163 (1994)) from the CCP4 program package (Collaborative Computational Projects No. 4. The CCP4 Suite: Programs for Protein Crystallography, Acta Cryst. D50: p. 760-763) using a variety of TNF-related structures as search probes were not successful. No obvious peaks corresponding to the 3-fold axes of the two BAFF trimers were observed in the self rotation function, apparently due to a diffuse Patterson map, similar to the case of TNF (Jones, E.Y., et al., Acta Crystallogr A,. 47(Pt 6): p. 753-70 (1991)). A search for heavy atom derivatives was undertaken and useful phase

information was obtained from Hg, Pt, Ir and Sm derivatives by using the program SOLVE (Terwilliger, T.C. and J. Berendzen, Acta Crystallogr D Biol Crystallogr, 55(Pt 4): p. 849-61 (1999)) (Table 1). The resulting electron density map (figure of merit 0.41) was considerably improved by density modification with the program RESOLVE (figure of merit 0.67) (Terwilliger, T.C., Acta Crystallogr D, 56: p. 965-972 (2000)). Inspection of maps revealed continuous density for the polypeptide chains and indicated that the correct space group is $P6_5$. A partial model of BAFF based on the human CD40L structure (Karpusas, M., et al., Structure, 3(12): p. 1426 (1995) and Karpusas, M., et al., Structure, 3: p. 1031-1039 (1995)) was manually fit on to the map and was rigid-body refined with XPLOR (Brunger, A.T., X-PLOR Version 3.0: a System for X-ray Crystallography and NMR, New Haven, USA, Yale University Press (1992)). The initial crystallographic R-factor was 50.5%. The fitted model was used to calculate non-crystallographic symmetry (NCS) operators. Phases calculated from the model were combined with experimental phases with SIGMAA from CCP4 package (Collaborative Computational Projects No. 4. The CCP4 Suite: Programs for Protein Crystallography, Acta Cryst. D50: p. 760-763) and were improved by solvent flattening, histogram matching and 6-fold averaging with the program DM from the CCP4 package (Collaborative Computational Projects No. 4. The CCP4 Suite: Programs for Protein Crystallography, Acta Cryst. D50: p. 760-763). The RESOLVE and DM maps as well as the 2Fo-Fc maps were used for iterative model

building with the graphics program QUANTA (Molecular Simulations, Inc., San Diego, CA).

All subsequent refinement steps were carried out using the program CNX (Brunger, A.T., Crystallography & NMR System: a New Software for Macromolecular Structure Determination, Acta Crystallogr. D., 54: p. 905-921 (1998); and Molecular Simulations, Inc.). These included maximum likelihood positional refinement, torsion angle simulated annealing and grouped B-factor refinement with NCS restraints. 10% of the data were allocated for calculation of the R-free factor. A bulk-solvent correction was employed after the complete model was built. Simulated annealing omit maps were used to check validity of the model. NCS restrains were removed for certain regions of the molecule at the later stages of refinement. After completion of refinement, the R-working and R-free factors of the model were 22.6 % and 26.8 % respectively for the data ($F > 2\sigma$) in the 35-3.3 Å resolution range. At that stage, synchrotron data to 2.8 Å resolution were collected at beamline X4A of National Syncrotron Light Source (NSLS) and the structure was further refined against the new data (Table 1). The R-working and R-free factors of the final refined model were 21.7 % and 25.0 % respectively for the data ($F > 2\sigma$) in the 30-2.8 Å resolution range (R-working and R-free are 22.2 % and 25.4 % respectively for the data ($F > 0\sigma$) in the 35-2.8 Å resolution range). Stereochemistry statistics were calculated with PROCHECK (Laskowski, R.A., et al., J. Appl. Crystallogr., 26: p. 283-290 (1993)) and CNX (Brunger, A.T., Crystallography & NMR System: a New

Software for Macromolecular Structure Determination, Acta Crystallogr. D., 54: p. 905-921 (1998)). Electrostatic potential surfaces were calculated with GRASP (Nicholls, A., GRASP: Graphical Representation and Analysis of Surface Properties (New York, Columbia University) (1992)). Additional data statistics are presented in Table 1.

Despite the limited resolution range, all residues except the myc-tag and N-terminal residues 136-141 were uniformly well defined in the final 2Fo-Fc electron density map (Figure 1). The asymmetric unit of the crystal contained two trimers of BAFF. The final crystallographic R-working and R-free were 21.7% and 25.0% respectively for the data ($F > 2\sigma$) in the 30-2.8 Å resolution range. The model consists of 864 amino acid residues constituting 6 polypeptide chains. No water molecules were added to the model. The root mean square (r.m.s.) deviations on bond lengths were 0.008 Å and on bond angles were 1.4°. All non-glycine residues have φ/ψ angles in the allowed regions of the Ramachandran diagram and 84.8% of the residues had φ/ψ angles in the most favored regions. The average B-factor of the main chain atoms is 37.4 $Å^2$. Crystallographic statistics are summarized in Table 1.

Like the other TNF family members, the crystallized BAFF fragment is a homotrimeric protein with an overall shape that resembled that of a truncated pyramid (Figures 2a and 2b). The dimensions of the molecular trimer were 58 x 58 x 54 Å. Each monomer folded as a sandwich of two antiparallel β-sheets with Greek key topology. In the description that follows, for the β-strands and other structural

features, the notation introduced for TNF is used (Eck, M.J. and S.R. Sprang, J Biol Chem, 264(29): p. 17595-605 (1989)). The inner β-sheet is involved in monomer contacts and is composed of β-strands A", A, H, C and F (Figure 2a). The outer sheet contains most of the solvent-exposed residues and is composed of A1, A2, B', B, G, D and E strands. The β-strands are connected by loops whose length varies considerably. The core of the protein is mostly hydrophobic but it also contains a few buried polar residues involved in interactions, such the one between the His210 and Tyr201 side chains. A disulfide bridge connecting Cys232 of β-strand E with Cys245 of β-strand F was observed. There is also a free cysteine (Cys146) at the N-terminal end of the A strand that is partially exposed to the solvent.

The three monomers were related to each other by a 3-fold axis that was aligned approximately with the β-strands of the monomers. The monomer interface was primarily hydrophobic, characterized by the participation of 5 aromatic side chain residues (Tyr192, Phe194, Tyr196, Tyr246, Phe278). A 3-residue cluster was formed by Gln234 from each monomer on the 3-fold axis near the top of the pyramid. Approximately 945 $Å^2$ of monomer solvent accessible surface was buried to form the trimer and 56% of that surface area was hydrophobic.

The r.m.s. positional deviation between equivalent residues from different BAFF monomers was small (0.66 Å). The deviation was mostly due to significant differences in the conformation for the D-E loop that include positional shifts as large as 3.5 Å for some atoms. Three different hairpin-like

conformations were observed for the D-E loop. The first one was adopted by four out of the six monomers and was stabilized by an internal hydrogen bond between the amide group of Glu223 and the carbonyl group of Phe220 and by interactions with symmetry related molecules. The other two conformations were adopted by the other two monomers respectively and were characterized by the absence of any crystal contacts for the loop. In one of the monomers, the loop was stabilized by a hydrogen bond between side chain atom Oε1 of Glu223 and the amide nitrogen of Phe220. The side chain of Glu223 was also stabilized by an interaction of Oε2 with the Nζ of Lys216.

Weak electron density was observed for the biantennary complex-type carbohydrate attached to residue Asn242 on the F strand of BAFF. Mass spectrometry analysis of the protein material used for the crystallization indicated the presence of a BAFF component corresponding to the protein plus a high mannose glycan. Apparently, the crystallization process selected both the glycosylated and aglycosylated species of BAFF. The electron density was not clear enough to allow model building of the carbohydrate residues. However, it is obvious that residues Tyr206 and Arg231 make contacts with the carbohydrate. There are no crystal contacts close to that region and the rest of the carbohydrate is disordered within a large solvent channel in the crystal.

Although the overall structure of BAFF was similar to that of other TNF family members, the structure of the loops and certain β-strands varied

considerably as compared to that of other TNF family members. BAFF has low sequence homology with other family members: the sequence identity of BAFF with each of TNF-α, LT-α, CD40L and TRAIL is 21.5%, 21.5%, 17.4% and 20.1%, respectively, based on structural alignments (Figures 3a and 3b); and the corresponding r.m.s. positional deviations between equivalent Cα atoms of BAFF with each of TNF-α, LT-α, CD40L and TRAIL is 2.1 Å, 2.0 Å, 2.0 Å and 2.4 Å, respectively. The BAFF crystal structure determined herein is the first available structure of a group of TNF family member proteins characterized by the presence of a disulfide bridge connecting β-strands E and F.

The BAFF structure showed conservation of hydrophobic residues that are important components of the protein core of TNF family members, such as Trp168 and Phe279. The size and position of the major β-strands is similar to that of other TNF family members, with the exception of strand F, which is markedly shorter. The structure showed that the first loop that connected strands A and A" was rather long and contained two short β-strands (termed A1 and A2), which formed an extension of the external β-sheet. Analogous β-strands have not been observed in the previously determined members of the TNF family except for a strand, similar to A1, that has been observed in one of the available Apo2L/TRAIL structures (Mongkolsapaya, J., et al., Nat Struct Biol, 6(11): p. 1048-1053 (1999)). The conformation of the A-A" loop was stabilized by the two small β-strands and a few other interactions with other parts of the molecule, as evidenced by the well defined electron density.

Another unusual feature of the BAFF structure was the absence of the loop connecting A' and A" strands. In the case of BAFF, these two strands formed a single continuous A" strand with a β-bulge in the middle.

The C-D and E-F loops of the BAFF structure that are located at the "top" of the pyramid were shorter than those of the other members of the TNF family. Their shorter length may account for the well-defined electron density, which is not common for that region of TNF ligands. The most notable feature of the BAFF structure was an unusually long and extended D-E loop (residues Lys216-Ser215) (Figures 2a and 2b). This D-E loop appeared to be the longest D-E loop of all the known members of the TNF family and corresponded to an insertion of 6-11 amino acid residues (depending to the TNF member it is compared with). This loop is flexible, as evidenced by the presence of three different conformations in the crystal.

Although the structure of the G-H loop is generally conserved in the four other known structures of TNF family members, it is significantly different in BAFF, particularly for the N-terminal part of the loop (Pro264-Asn267). That part of the loop was observed to extend further away from the core of the molecule and was stabilized by several interactions, including an H-bond between Oδ1 of Asp203 and the carbonyl oxygen of Ala268 and an H-bond between Oε1 of Gln159 and the amide nitrogen of Asn267.

The disulfide bridge connecting strands E and F may play a role in stabilizing the BAFF molecule. The bridge lay close to the 3-fold axis in a region of

the molecule that frequently contain stabilizing elements, such as other disulfide bonds, as in TNFα and CD40L, or such as a Zn^{2+} binding site, as in Apo2L/TRAIL (Hymowitz, S.G., et al., Biochemistry, 39(4): p. 633-40 (2000)).

In the absence of structure-function data for BAFF and a co-crystal structure of a complex of BAFF and one of its receptors, the location of the binding site for the three known BAFF receptors (BCMA, TACI and BAFF-R) may only be inferred by analogy to what is known for other TNF family members. It is therefore expected to lie in the elongated cleft formed between adjacent monomers of a BAFF trimer. Three receptor binding sites are expected to exist per BAFF trimer; roughly consisting of residues of the D-E, A"-A, C-D and G-H loops, involving BAFF amino acid residues His218-Val227, Pro264-Glu266, Gly161-Tyr163, Ala151-Pro156, Leu240-Asn242,Ser171 and Phe172, and perhaps other residues. There is almost no conservation of any binding site residues of BAFF relative to LT-α and TRAIL. The character of the putative binding site surface is mixed and includes positively and negatively charged polar residues, uncharged polar residues and hydrophobic residues.

In the two cases of known TNF ligand-receptor complexes, the receptors are observed to be elongated molecules that bind along the whole length of ligand cleft, making a large number of contacts with the TNF ligand. Two consecutive CRDs from the receptors make contacts with the TNF ligand that can be grouped into two patches, the top patch (patch A) and the bottom patch (patch B) (Hymowitz, S.G., et al., Mol Cell,

4(4): p. 563-71 (1999)). Patch A corresponds mostly to contacts with the third receptor CRD and patch B corresponds mostly to contacts with the second CRD. In all the TNF family members with known structures, the binding site cleft is particularly shallow.

In the case of BAFF, however, the presence of the unusually extended D-E loop results in the formation of a relatively deep, concave site in the lower part of the cleft (bottom of the pyramid) that is likely to constitute an important part of the receptor binding site. This site corresponds to the patch B described. The observed flexibility of the D-E loop may be a feature necessary for structural adaptation for receptor binding. Calculation of electrostatic potential surface shows that there is a predominance of negative charges on the surface of patch B (Figure 4). These charges are mostly localized on the "rim" of the cavity. The residues that are primarily responsible for these charges are Asp152, Asp222, Glu223, Glu254, Asp273 and Asp275. The rest of the putative receptor binding site has mostly neutral charges, with the exception of a small positively charged area due to residue Arg231. This arginine is conserved in CD40L (Arg207), where it was found to be an important contributor to binding and specificity (Singh, J., et al., Protein Sci, 7(5): p. 1124-35 (1998)). Arg231 of BAFF is positioned between patches A and B and makes contacts with the carbohydrate that is attached to residue Asn242.

The carbohydrate of BAFF appears to occupy part of the putative receptor binding site, near patch A. The carbohydrate would be in steric conflict with a

bound receptor having the size and shape of TNFR (tumor necrosis factor receptor) unless it adopts a limited set of conformations.

Understanding the interaction of BAFF with its receptors at a structural level is of interest due to several unusual characteristics of its receptors. The extracellular domains of BCMA and BAFF-R are the smallest known of all TNF receptors: they have a size equivalent to one CRD. All the other TNF receptors have at least two CRDs (such as TACI) and usually around four (such as TNFR and CD40). Although the N-terminal CRD of several receptors, such as TNFR and CD40, is not involved in direct contacts with the ligand, it appears to be necessary for ligand binding and may have other important functions (Chan, K.F., et al., Immunity, 13(4): pp. 419-422 (2000)). Thus, it is of note that the smaller size of BAFF receptors is sufficient for the different aspects of the function of these molecules.

The existing structural information for other TNF family receptors is not sufficient for the modeling of the interactions of BAFF with its receptors. Analysis of the BCMA and TACI sequences suggests that these proteins may adopt the A1C2 motif (Thompson, J.S., et al., J Exp Med, 192(1): p. 129-35 (2000)). This motif has been observed in the fourth CRD of TNFR, which is not involved in ligand-receptor contacts (Naismith, J.H., et al., Structure, 4(11): p. 1251-62 (1996)) and therefore cannot be used to model a BAFF-receptor complex. In addition, a satisfactory alignment of the BAFF-R sequence with any of the other receptor sequences is not easy to generate; indicating

that the BAFF-R extracellular domain may adopt a distantly related, or even new, folding motif relative to other TNFR family members (Thompson et al., BAFF-R, a Novel TNF Receptor That Specifically Interacts with BAFF, Sciencexpress (Aug. 16, 2001), at http://www.sciencexpress.org) and Thompson, J.S. et al., Science (2001 Sep 14); 293 (5537): 2108-2111.

The fact that BAFF has an unusually long D-E loop that facilitates the formation of a deep cleft may be related to the unusually small size of two of the BAFF receptors, BCMA and BAFF-R. The potential increase in ligand-receptor number of contacts due to the deep cleft may compensate for the reduction of contacts due the absence of a second CDR. Thus, it is likely that BCMA and BAFF-R bind to the cleft in a manner analogous to the second CRD of TNFR.

Also, the observation of the negatively charged region of the BAFF cleft is of interest because the BAFF-R receptor appears to be a protein with an unusually large number of positively charged residues, particularly close to the N-terminus (Thompson et al., BAFF-R, a Novel TNF Receptor That Specifically Interacts with BAFF, Sciencexpress (Aug. 16, 2001), at http://www.sciencexpress.org and Thompson, J.S. et al., Science (2001 Sep 14); 293 (5537): 2108-2111). The apparent presence of electrostatic complementarity may suggest that the binding energy of BAFF-R-BAFF association may have a significant electrostatic component. Homology modeling of the closely related APRIL molecule, as detailed in Example 2, indicates that APRIL does not have a similar negatively-charged area but, instead, it has an extensively positively

charged area (Figure 4). This observation is consistent with the fact that BAFF-R does not bind to APRIL (Thompson et al., BAFF-R, a Novel TNF Receptor That Specifically Interacts with BAFF, Sciencexpress (Aug. 16, 2001), at http://www.sciencexpress.org and Thompson, J.S. et al., Science (2001 Sep 14); 293 (5537): 2108-2111). In contrast, BCMA and TACI sequences indicate that these molecules contain mixed electrostatic charges, which is consistent with the fact that these molecules bind to both BAFF and APRIL. The above considerations suggest that predictions of specificity between different TNF family ligands and receptors based on electrostatic complementarities may be feasible in cases where sufficient structural information is available.

Table 1: Summary of Crystallographic Analysis

Diffraction data

	Native 1	Native 2 (X4A)	Hg^{S}	Pt^{SS}	Sm^{SSS}	Ir^{SSSS}
Soaking conditions	-	-	0.1 mM, 24 hr.	1 mM, 24 hr.	2 mM, 24 hr.	1 mM, 24 hr.
Cell dimensions						
a (Å)	122.12	121.72	122.62	122.72	122.61	122.75
c (Å)	157.55	160.74	158.35	156.71	159.2	156.49
Space group	$P6_5$	$P6_5$	$P6_5$	$P6_5$	$P6_5$	$P6_5$
Resolution (Å)	35-3.3 (3.42-3.3)†	30-2.8 (2.9-2.8)†	35-3.5	35-4.2	35-3.7	35-4.1
Unique reflections	20,072	31,743	16,814	9,127	14,417	10,227
Completeness (%)	99.7 (99.6)†	95.6 (81.8)†	98.3	93.1	99.5	96.8
Average I/σ	19.1. (3.8)†	14.2 (2.9)†	12.6	10.8	14.3	8.1
R_{merge}* (%)	9.0 (38.4)†	7.9 (26.7)†	12.4	15.3	14.9	16.5
# of sites	-	-	4	3	1	5
R_{iso}	-	-	22.9	24.8	26.8	30.9

Table 1 Continued

Phasing:

Figure of Merit:	centric	0.73	accentric	0.67

Refinement:

Resolution range used (F>2σ) (Å)	30-2.8
R-factor (%)	21.7
R-free (%)	25.0

Model:

No. of non-H atoms	6,858
No. of protein residues	864
Contents of asymmetric unit	2 BAFF trimers
Average B-factor, main chain (Å^2)	37.4
Average B-factor, side chain (Å^2)	45.2

Stereochemistry:

RMS deviations

Bond lengths (Å)	0.008
Bond angles (Å)	1.44
Dihedrals (°)	26.6
Improper (°)	0.82

(§) Hg = $(C_2H_5HgO)HPO_2$
(§§) Pt = $K_2Pt(NO_2)_4$
(§§§) Sm = $SmCl_3$
(§§§§) Ir = $(NH_4)IrCl_6$
(*) $R_{merge} = \Sigma_h\Sigma_i|I_{hi}-I_h|/\Sigma_{hi}I_{hi}$
(†) Values for the highest resolution shell given in parenthesis

EXAMPLE 2 HOMOLOGY MODEL STRUCTURE OF APRIL

According to Martin, A.C., et al., Proteins Suppl., 1: p. 14-28 (1997) and Sanchez, R. and A. Sali, Proteins, Suppl(1): p. 50-8 (1997), sequence homology of 30% or higher is sufficient for the generation of homology models of significant level of accuracy. APRIL has 34% sequence identity with BAFF (Figure 3a). Therefore, a homology model of the TNF-homologous domain of a human APRIL trimer was built by using the crystal structure of BAFF as a template. The homology model structure coordinates of human APRIL are shown in Figure 10.

A sequence alignment of APRIL and BAFF TNF-homologous domain sequences was generated with the program QUANTA and refined manually (Figure 3a). The alignment and the crystal structure of BAFF were used for the generation of a homology model of human APRIL (residues 114-250 (see Figure 9c)) with the program MODELER (Sali, A. and T.L. Blundell, J Mol Biol, 212(2): p. 403-28 (1990)). This is an automated program that used spatial restraints such as inter-Cα distances and dihedral angles from the BAFF structure and generated the model by minimizing the violations of the restraints. A trimer of APRIL was generated from the monomer by applying the same transformations that relate the three BAFF monomers.

Based on the modeling, the overall structures of APRIL and BAFF are predicted to be very similar. The only major differences in APRIL, relative to BAFF, is a 6-residue deletion in the D-E loop, a 2-residue insertion in the top of the E-F loop and a one residue

deletion in the A-A" loop of APRIL. The aromatic residues that are involved in the formation of the trimerization interface are conserved, except for Phe194 of BAFF that is a leucine in APRIL. There are no significant steric conflicts between monomers of an APRIL trimer.

The shorter length of the D-E loop of APRIL is a significant structural difference that is likely to play a role in differences of specificity between APRIL and BAFF. As a consequence of the shorter loop size, the putative receptor binding site of APRIL for one or more of its receptors is much more shallow. The other structural differences that may account for specificity differences may be the different surface amino acid side chains. Most of the putative receptor binding site residues are different in APRIL when compared to BAFF except for those in a contiguous region that is located near patch A, which consists mostly of residues of the E strand. The putative receptor binding site residues of APRIL for one or more of its receptors include Gly188, Arg189, Gln190, Glu191, Pro230, Arg231, Ala232, Ser131, Asp132, Val133, Pro122, Ile123, Asn124, Ala125, Thr126, Ser127, Arg206, Ala207, Tyr208, Ala141 and Leu142, and possibly other residues. Calculation of the electrostatic potential surface of an APRIL trimer indicates that there is a predominance of positive charges on the putative receptor binding site (Figure 4). This is opposite to the predominance of negative charges in BAFF. The dominant feature of positive potential is associated with Arg195 that is positioned in the middle of the binding site and is conserved in BAFF (Arg231).

Equivalents

The invention may be embodied in other specific forms without departing from the spirit or essential characteristics thereof. The foregoing embodiments are therefore to be considered in all respects illustrative of, rather than limiting on, the invention disclosed herein. All changes which come within the meaning and range of equivalency of the claims are intended to be embraced therein.

CLAIMS

What is claimed is:

1. A crystallizable composition comprising a BAFF polypeptide.

2. The crystallizable composition according to claim 1, wherein said BAFF polypeptide is a polypeptide comprising the extracellular domain of BAFF.

3. The crystallizable composition according to claim 1, wherein said BAFF polypeptide comprises a polypeptide consisting of amino acid 136 to amino acid 285 of human BAFF (SEQ ID NO: 2).

4. A crystallizable composition comprising a trimer of BAFF polypeptides.

5. A crystal comprising a BAFF polypeptide.

6. The crystal according to claim 5, wherein said BAFF polypeptide comprises the extracellular domain of BAFF.

7. The crystal according to claim 5, wherein said BAFF polypeptide comprises a polypeptide consisting of amino acid 136 to amino acid 285 of human BAFF (SEQ ID NO: 2).

8. A crystal comprising a trimer of BAFF polypeptides.

9. A computer for producing a three-dimensional representation of:

a) a molecule or a molecular complex defined by the structure coordinates of the BAFF amino acids set forth in Figure 8, or

b) a homologue of said molecule or molecular complex, wherein said homologue has a root mean square deviation from the backbone atoms of said amino acids between 0.00Å and 1.50Å; and

wherein said computer comprises:

(i) a machine-readable data storage medium comprising a data storage material encoded with machine-readable data, wherein said data comprises the structure coordinates of the BAFF amino acids set forth in Figure 8; and

(ii) instructions for processing said machine-readable data into said three-dimensional representation.

10. The computer for producing a three-dimensional representation according to claim 9, wherein said homologue has a root mean square deviation from the backbone atoms of said amino acids of between 0.00Å and 1.00Å.

11. The computer for producing a three-dimensional representation according to claim 9, wherein said homologue has a root mean square deviation from the backbone atoms of said amino acids of between 0.00Å and 0.50Å.

12. A computer for determining the structure coordinates corresponding to X-ray diffraction data obtained from a molecule or molecular complex, wherein said computer comprises:

a) a machine-readable data storage medium comprising a data storage material encoded with machine-readable data, wherein said data comprises the structure coordinates of BAFF according to Figure 8;

b) a machine-readable data storage medium comprising a data storage material encoded with machine-readable data, wherein said data comprises X-ray diffraction data obtained from said molecule or molecular complex; and

c) instructions for performing a Fourier transform of the machine readable data of (a) and for processing said machine readable data of (b) into structure coordinates.

13. A computer for producing a three-dimensional representation of:

a) a molecule or molecular complex comprising a first binding site defined by structure coordinates of a plurality of BAFF amino acids selected from the group consisting of His218, Val219, Phe220, Gly221, Asp222, Glu223, Leu224, Ser225, Leu226, Val227, Pro264, Arg265, Glu266, Gly161, Ser162, Tyr163, Ala151, Asp152, Ser153, Glu154, Thr155, Pro156, Leu240, Pro241, Asn242, Ser171 and Phe172 according to Figure 8; or

b) a homologue of said molecule or molecular complex, wherein said homologue comprises a second binding site that has a root mean square deviation from the backbone atoms of a plurality of BAFF amino acids between 0.00Å and 1.50Å;

wherein said computer comprises:

(i) a machine-readable data storage medium comprising a data storage material encoded with machine-readable data, wherein said data comprises the

structure coordinates of said plurality of BAFF amino acids selected from the group consisting of His218, Val219, Phe220, Gly221, Asp222, Glu223, Leu224, Ser225, Leu226, Val227, Pro264, Arg265, Glu266, Gly161, Ser162, Tyr163, Ala151, Asp152, Ser153, Glu154, Thr155, Pro156, Leu240, Pro241, Asn242, Ser171 and Phe172 according to Figure 8; and

(ii) instructions for processing said machine-readable data into said three-dimensional representation.

14. The computer for producing a three-dimensional representation according to claim 13, wherein said homologue comprises a second binding site that has a root mean square deviation from the backbone atoms of said amino acids of between 0.00Å and 1.00Å.

15. The computer for producing a three-dimensional representation according to claim 13, wherein said homologue comprises a second binding site that has a root mean square deviation from the backbone atoms of said amino acids of between 0.00Å and 0.50Å.

16. The computer according to any one of claims 13-15, wherein said first binding site is a binding site of BAFF for one or more receptors of BAFF.

17. The computer according to any one of claims 13-15, wherein said second binding site is a binding site of BAFF for one or more receptors of BAFF.

18. A computer for producing a three-dimensional representation of:

a) a molecule or molecular complex comprising a first binding site defined by structure coordinates of at least four BAFF amino acids selected from the group consisting of His218, Val219, Phe220, Gly221, Asp222, Glu223, Leu224, Ser225, Leu226, Val227, Pro264, Arg265, Glu266, Gly161, Ser162, Tyr163, Ala151, Asp152, Ser153, Glu154, Thr155, Pro156, Leu240, Pro241, Asn242, Ser171 and Phe172 according to Figure 8; or

b) a homologue of said molecule or molecular complex, wherein said homologue comprises a second binding site that has a root mean square deviation from the backbone atoms of said at least four BAFF amino acids of between 0.00Å and 1.50Å;

wherein said computer comprises:

(i) a machine-readable data storage medium comprising a data storage material encoded with machine-readable data, wherein said data comprises the structure coordinates of said at least four BAFF amino acids selected from the group consisting of His218, Val219, Phe220, Gly221, Asp222, Glu223, Leu224, Ser225, Leu226, Val227, Pro264, Arg265, Glu266, Gly161, Ser162, Tyr163, Ala151, Asp152, Ser153, Glu154, Thr155, Pro156, Leu240, Pro241, Asn242, Ser171 and Phe172 according to Figure 8; and

(ii) instructions for processing said machine-readable data into said three-dimensional representation.

19. The computer for producing a three-dimensional representation according to claim 18, wherein said homologue comprises a second binding site that has a root mean square deviation from the backbone atoms of said amino acids of between 0.00Å and 1.00Å.

20. The computer for producing a three-dimensional representation according to claim 18, wherein said homologue comprises a second binding site that has a root mean square deviation from the backbone atoms of said amino acids of between 0.00Å and 0.50Å.

21. The computer according to any one of claims 18-20, wherein said first binding site is a binding site of BAFF for one or more receptors of BAFF.

22. The computer according to any one of claims 18-20, wherein said second binding site is a binding site of BAFF for one or more receptors of BAFF.

23. The computer according to any one of claims 9-22, further comprising a display for displaying said structure coordinates.

24. A computer for determining at least a portion of the structure coordinates corresponding to an X-ray diffraction pattern of a molecule or a molecular complex whose structure is unknown, wherein said computer comprises:

a) a machine-readable data storage medium comprising a data storage material encoded with machine-readable data, wherein said data comprises at least a portion of the structure coordinates according to Figure 8;

b) a machine-readable data storage medium comprising a data storage material encoded with machine-readable data, wherein said data comprises an X-ray diffraction pattern of said molecule or molecular complex;

c) a working memory for storing instructions for processing said machine-readable data of a) and b);

d) a central processing unit coupled to said working memory and to said machine-readable data of a) and b) for performing a Fourier transform of the machine readable data of (a) and for processing said machine readable data of (b) into structure coordinates; and

e) a display coupled to said central processing unit for displaying said structure coordinates of said molecule of molecular complex.

25. The method according to claim 24, wherein said molecule or molecular complex whose structure is unknown comprises an APRIL polypeptide.

26. The method according to claim 25, wherein said APRIL polypeptide comprises the extracellular domain of APRIL.

27. The method according to claim 24, wherein said molecule or molecular complex whose structure is unknown comprises a trimer of APRIL polypeptides.

28. A method for evaluating the potential of a chemical entity to associate with:

a) a molecule or molecular complex defined by the structure coordinates of the BAFF amino acids set forth in Figure 8; or

b) a homologue of said molecule or molecular complex having a root mean square deviation

from the backbone atoms of said amino acids between 0.00Å and 1.50Å;

comprising the steps of:

(i) employing computational means to perform a fitting operation between said chemical entity and the molecule or molecular complex or said homologue of said molecule or molecular complex; and

(ii) analyzing the results of said fitting operation to quantify the association between said chemical entity and said molecule or molecular complex or said homologue of said molecule or molecular complex.

29. The method according to claim 28, wherein said homologue has a root mean square deviation from the backbone atoms of said amino acids between 0.00Å and 1.00Å.

30. The method according to claim 28, wherein said homologue has a root mean square deviation from the backbone atoms of said amino acids between 0.00Å and 0.50Å.

31. A method for evaluating the potential of a chemical entity to associate with:

a) a molecule or molecular complex comprising a first binding site defined by a plurality of BAFF amino acids selected from the group consisting of His218, Val219, Phe220, Gly221, Asp222, Glu223, Leu224, Ser225, Leu226, Val227, Pro264, Arg265, Glu266, Gly161, Ser162, Tyr163, Ala151, Asp152, Ser153, Glu154, Thr155, Pro156, Leu240, Pro241, Asn242, Ser171 and Phe172 according to Figure 8; or

b) a homologue of said molecule or molecular complex comprising a second binding site having a root mean square deviation from the backbone atoms of a plurality of BAFF amino acids between 0.00Å and 1.50Å;

comprising the steps of:

(i) employing computational means to perform a fitting operation between said chemical entity and said first binding site or said second binding site; and

(ii) analyzing the results of said fitting operation to quantify the association between said chemical entity and said first binding site or said second binding site.

32. The method according to claim 31, wherein said homologue has a root mean square deviation from the backbone atoms of said amino acids between 0.00Å and 1.00Å.

33. The method according to claim 31, wherein said homologue has a root mean square deviation from the backbone atoms of said amino acids between 0.00Å and 0.50Å.

34. The method according to any one of claims 31-33, wherein said first binding site is a binding site of BAFF for one or more receptors of BAFF.

35. The method according to any one of claims 31-33, wherein said second binding site is a binding site of BAFF for one or more receptors of BAFF.

36. A method for evaluating the potential of a chemical entity to associate with:

a) a molecule or molecular complex comprising a first binding site defined by at least four BAFF amino acids selected from the group consisting of His218, Val219, Phe220, Gly221, Asp222, Glu223, Leu224, Ser225, Leu226, Val227, Pro264, Arg265, Glu266, Gly161, Ser162, Tyr163, Ala151, Asp152, Ser153, Glu154, Thr155, Pro156, Leu240, Pro241, Asn242, Ser171 and Phe172 according to Figure 8; or

b) a homologue of said molecule or molecular complex comprising a second binding site having a root mean square deviation from the backbone atoms of said at least four BAFF amino acids between 0.00Å and 1.50Å;

comprising the steps of:

(i) employing computational means to perform a fitting operation between said chemical entity and said first binding site or said second binding site; and

(ii) analyzing the results of said fitting operation to quantify the association between said chemical entity and said first binding site or said second binding site.

37. The method according to claim 36, wherein said homologue has a root mean square deviation from the backbone atoms of said amino acids between 0.00Å and 1.00Å.

38. The method according to claim 36, wherein said homologue has a root mean square deviation

from the backbone atoms of said amino acids between 0.00Å and 0.50Å.

39. The method according to any one of claims 36-38, wherein said first binding site is a binding site of BAFF for one or more receptors of BAFF.

40. The method according to any one of claims 36-38, wherein said second binding site is a binding site of BAFF for one or more receptors of BAFF.

41. A chemical entity evaluated by the method according to any one of claims 28-40.

42. A compound assembled from one or more of a chemical entity according to claim 41.

43. A method for identifying a potential antagonist of BAFF comprising the steps of:

a) using structure coordinates of the amino acids of BAFF according to Figure 8 ± a root mean square deviation from the backbone atoms of said amino acids between 0.00Å and 1.50Å, to generate a three-dimensional structure of a molecule or a molecular complex comprising a binding site;

b) employing said three-dimensional structure to design or select said potential antagonist;

c) synthesizing said potential antagonist; and

d) contacting said potential antagonist with BAFF to determine the ability of said potential antagonist to interact with BAFF.

44. The method according to claim 43, wherein said root mean square deviation from the backbone atoms of said amino acids is between 0.00Å and 1.00Å.

45. The method according to claim 43, wherein said root mean square deviation from the backbone atoms of said amino acids is between 0.00Å and 0.50Å.

46. The method according to claim 43, wherein said binding site is a binding site of BAFF for one or more of the receptors of BAFF.

47. A method for identifying a potential antagonist of BAFF comprising the steps of:

a) using the structure coordinates of a plurality of BAFF amino acids selected from the group consisting of His218, Val219, Phe220, Gly221, Asp222, Glu223, Leu224, Ser225, Leu226, Val227, Pro264, Arg265, Glu266, Gly161, Ser162, Tyr163, Ala151, Asp152, Ser153, Glu154, Thr155, Pro156, Leu240, Pro241, Asn242, Ser171 and Phe172 according to Figure 8 or ± a root mean square deviation from the backbone atoms of said plurality of BAFF amino acids between 0.00Å and 1.50Å, to generate a three-dimensional structure of a molecule or a molecular complex comprising a binding site;

b) employing said three-dimensional structure to design or select said potential antagonist;

c) synthesizing said potential antagonist; and

d) contacting said potential antagonist with BAFF to determine the ability of said potential antagonist to interact with BAFF.

48. The method according to claim 47, wherein said root mean square deviation from the backbone atoms of said amino acids is between 0.00Å and 1.00Å.

49. The method according to claim 47, wherein said root mean square deviation from the backbone atoms of said amino acids is between 0.00Å and 0.50Å.

50. The method according to claim 47, wherein said binding site is a binding site of BAFF for one or more of the receptors of BAFF.

51. A method for identifying a potential antagonist of BAFF comprising the steps of:

a) using the structure coordinates of at least four BAFF amino acids selected from the group consisting of His218, Val219, Phe220, Gly221, Asp222, Glu223, Leu224, Ser225, Leu226, Val227, Pro264, Arg265, Glu266, Gly161, Ser162, Tyr163, Ala151, Asp152, Ser153, Glu154, Thr155, Pro156, Leu240, Pro241, Asn242, Ser171 and Phe172 according to Figure 8 or ± a root mean square deviation from the backbone atoms of said at least four BAFF amino acids between 0.00Å and 1.50Å, to generate a three-dimensional structure of a molecule or a molecular complex comprising a binding site;

b) employing said three-dimensional structure to design or select said potential antagonist;

c) synthesizing said potential antagonist; and

d) contacting said potential antagonist with BAFF to determine the ability of said potential antagonist to interact with BAFF.

52. The method according to claim 51, wherein said root mean square deviation from the backbone atoms of said at least four BAFF amino acids is between 0.00Å and 1.00Å.

53. The method according to claim 51, wherein said root mean square deviation from the backbone atoms of said at least four BAFF amino acids is between 0.00Å and 0.50Å.

54. The method according to claim 51, wherein said binding site is a binding site of BAFF for one or more of the BAFF receptors.

55. The method according to any one of claims 43-54, further comprising the step of:

(e) determining whether said potential antagonist interrupts BAFF and a receptor of BAFF interaction.

56. A potential antagonist of BAFF identified by the method according to any one of claims 43-55.

57. A method for evaluating the potential of a variant of an antagonist of BAFF to associate with:

a) a molecule or a molecular complex defined by the structure coordinates of the BAFF amino acids, set forth in Figure 8; or

b) a homologue of said molecule or molecular complex having a root mean square deviation from the backbone atoms of said amino acids between 0.00Å and 1.50Å;

comprising the steps of:

(i) employing computational means to perform a fitting operation between the variant and said molecule or molecular complex; and

(ii) analyzing the results of said fitting operation to quantify the association between said variant and said molecule or molecular complex.

58. The method according to claim 57, wherein said homologue has a root mean square deviation from the backbone atoms of said amino acids of between 0.00Å and 1.00Å.

59. The method according to claim 57, wherein said homologue has a root mean square deviation from the backbone atoms of said amino acids of between 0.00Å and 0.50Å.

60. A method for evaluating the potential of a variant of an antagonist of BAFF to associate with:

a) a first binding site of a molecule or a molecular complex defined by structure coordinates of a plurality of BAFF amino acids selected from the group consisting of His218, Val219, Phe220, Gly221, Asp222, Glu223, Leu224, Ser225, Leu226, Val227, Pro264, Arg265, Glu266, Gly161, Ser162, Tyr163, Ala151, Asp152, Ser153, Glu154, Thr155, Pro156, Leu240, Pro241, Asn242, Ser171 and Phe172, set forth in Figure 8; or

b) a homologue of said molecule or molecular complex comprising a second binding site

having a root mean square deviation from the backbone atoms of a plurality of BAFF amino acids between 0.00Å and 1.50Å;

comprising the steps of:

(i) employing computational means to perform a fitting operation between the variant and said first binding site or said second binding site; and

(ii) analyzing the results of said fitting operation to quantify the association between said variant and said first binding site or said second binding site.

61. The method according to claim 60, wherein said homologue has a root mean square deviation from the backbone atoms of a plurality of BAFF amino acids of between 0.00Å and 1.00Å.

62. The method according to claim 60, wherein said homologue has a root mean square deviation from the backbone atoms of a plurality of BAFF amino acids of between 0.00Å and 0.50Å.

63. The method according to any one of claims 60-62, wherein said first binding site is a binding site of BAFF for one or more receptors of BAFF.

64. The method according to any one of claims 60-62, wherein said second binding site is a binding site of BAFF for one or more receptors of BAFF.

65. A method for evaluating the potential of a variant of an antagonist of BAFF to associate with:

a) a first binding site of a molecule or a molecular complex defined by structure coordinates of at least four BAFF amino acids selected from the group consisting of His218, Val219, Phe220, Gly221, Asp222, Glu223, Leu224, Ser225, Leu226, Val227, Pro264, Arg265, Glu266, Gly161, Ser162, Tyr163, Ala151, Asp152, Ser153, Glu154, Thr155, Pro156, Leu240, Pro241, Asn242, Ser171 and Phe172, set forth in Figure 8; or

b) a homologue of said molecule or molecular complex comprising a second binding site having a root mean square deviation from the backbone atoms of said at least four BAFF amino acids between 0.00Å and 1.50Å;

comprising the steps of:

(i) employing computational means to perform a fitting operation between the variant and said first binding site or said second binding site; and

(ii) analyzing the results of said fitting operation to quantify the association between said variant and said first binding site or said second binding site.

66. The method according to claim 65, wherein said homologue has a root mean square deviation from the backbone atoms of said at least four BAFF amino acids of between 0.00Å and 1.00Å.

67. The method according to claim 65, wherein said homologue has a root mean square deviation from the backbone atoms of said at least four BAFF amino acids of between 0.00Å and 0.50Å.

68. The method according to any one of claims 65-67, wherein said first binding site is a binding site of BAFF for one or more receptors of BAFF.

69. The method according to any one of claims 65-67, wherein said second binding site is a binding site of BAFF for one or more receptors of BAFF.

70. A variant of an antagonist of BAFF identified by the method according to any one of claims 57-69.

71. A pharmaceutical composition comprising a pharmaceutically suitable carrier and a chemical entity according to claim 41 or a compound according to claim 42, a potential antagonist of BAFF according to claim 56, or a variant of an antagonist of BAFF according to claim 70.

72. A method of treating a condition associated with inappropriate or abnormal BAFF induced activation in a subject, comprising the step of administering an effective amount of a pharmaceutical composition according to claim 71 to the subject.

73. A method of preventing a condition associated with inappropriate or abnormal BAFF induced activation in a subject, comprising the step of administering an effective amount of a pharmaceutical composition according to claim 71 to the subject.

74. The method according to any one of claims 72-73, wherein said subject is a primate.

75. The method according claim 74, wherein said primate is a human.

76. The method according to any one of claims 72-73, wherein the condition is an autoimmune disease.

77. The method according to any one of claims 72-73, wherein the condition is an allergy.

78. The method according to any one of claims 72-73, wherein the condition is an inhibitor response to a therapeutic agent.

79. The method according to any one of claims 72-73, wherein the condition is rejection of a donor organ or tissue.

80. The method according to any one of claims 72-73, wherein the condition is an unwanted inflammatory response.

81. The method according to any one of claims 72-73, wherein the condition is an unwanted immune response.

82. The method according to any one of claims 72-73, wherein the condition is selected from the group consisting of: systemic lupus erythematosis, lupus neuritis, asthma, chronic obstructive pulmonary disease, bronchitis, emphysema, multiple sclerosis, uveitis, Alzheimer's disease, traumatic spinal cord injury, stroke, atherosclerosis, coronary restenosis, ischemic congestive heart failure, cirrhosis, hepatitis C, diabetic nephropathy, glomerulonephritis,

osteoarthritis, rheumatoid arthritis, psoriasis, atopic dermatitis, systemic sclerosis, radiation-induced fibrosis, Crohn's disease, ulcerative colitis, multiple myeloma and cachexia.

83. The method according to any one of claims 72-73, wherein said condition is systemic lupus erythematosis.

84. A method of utilizing the structure coordinates of BAFF to obtain a homology model structure of at least a portion of a molecule whose structure is unknown and at least a portion of whose structure is similar to the structure of BAFF, comprising the step of:

applying at least a portion of the structure coordinates set forth in Figure 8 to generate a three-dimensional molecular model of at least a portion of the molecule whose structure is unknown to generate a homology model structure of at least a portion of that molecule.

85. The method according to claim 84, wherein said molecule whose structure is unknown comprises an APRIL polypeptide.

86. The method according to claim 85, wherein said APRIL polypeptide comprises the extracellular domain of APRIL.

87. The method according to claim 84, wherein said molecule whose structure is unknown comprises a trimer of APRIL polypeptides.

88. A computer for producing a three-dimensional representation of:

a) a homology model structure of at least a portion of a molecule whose structure is unknown and at least a portion of whose structure is similar to the structure of BAFF, wherein said homology model structure is defined by at least a portion of the homology model structure coordinates of the APRIL amino acids set forth in Figure 10;

wherein said computer comprises:

(i) a machine-readable data storage medium comprising a data storage material encoded with machine-readable data, wherein said data comprises at least a portion of the structure coordinates of all of the APRIL amino acids set forth in Figure 10; and

(ii) instructions for processing said machine-readable data into said three-dimensional representation

89. The computer according to claim 88, further comprising a display for displaying said homology model structure coordinates.

Figure 1

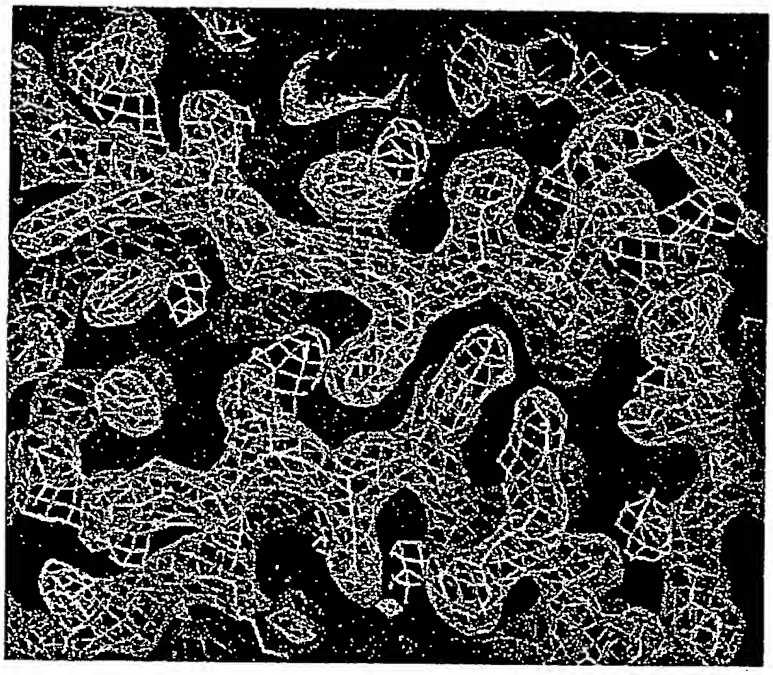

Figure 2

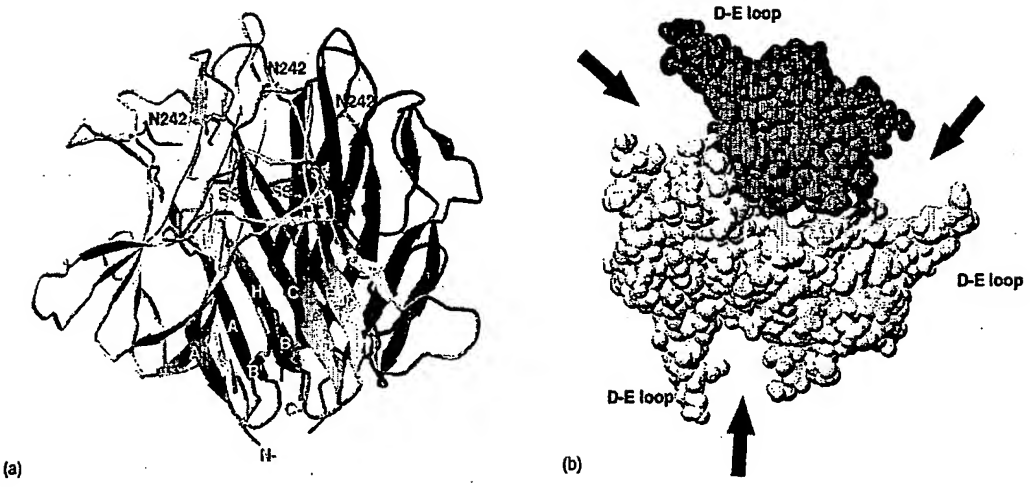

Figure 3a

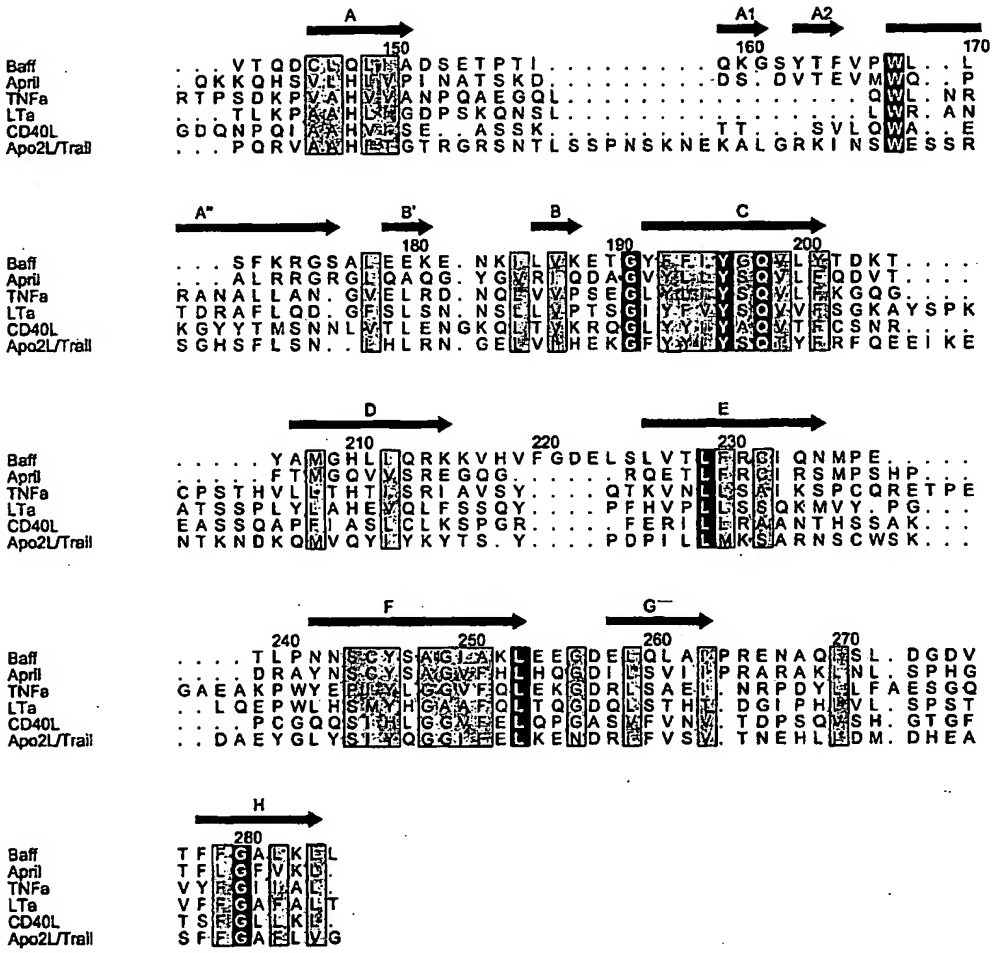
A
A1
A2
150
160
170
Baff
April
TNFa
LTa
CD40L
Apo2L/Trail
A"
B'
B
C
180
190
200
D
E
210
220
230
F
G
240
250
260
270
H
280

Figure 3b

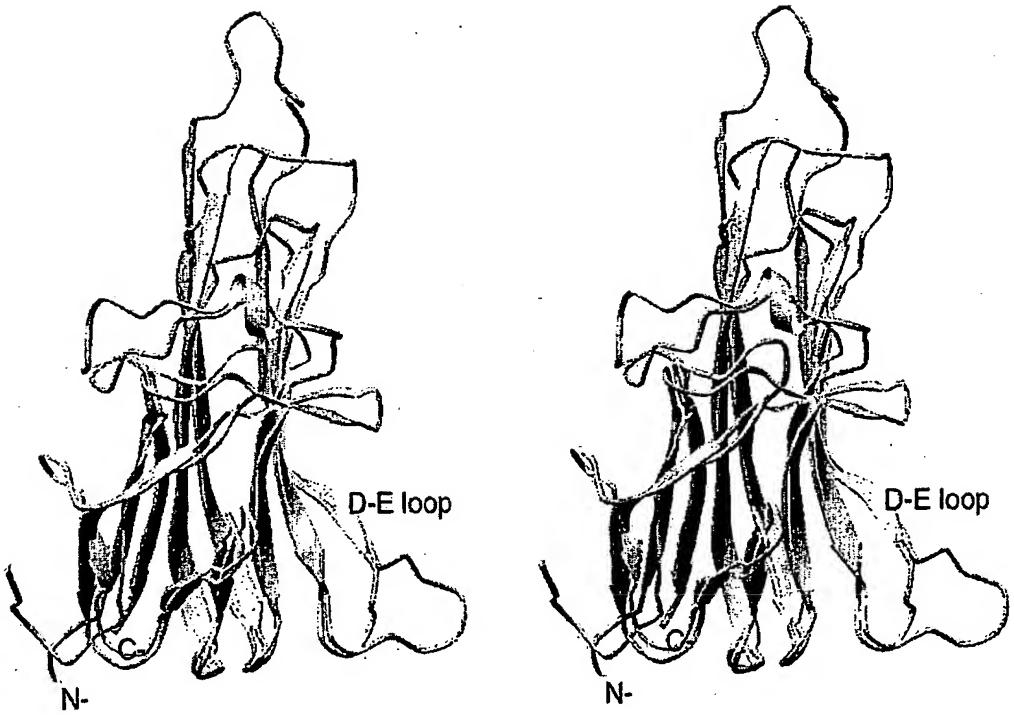

Figure 4

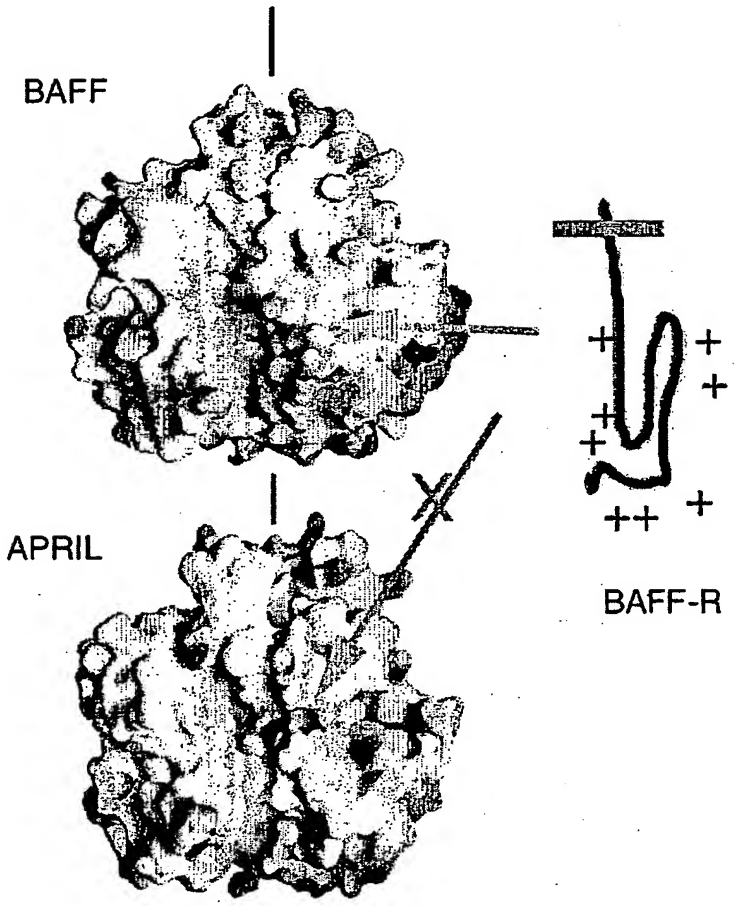

Figure 5

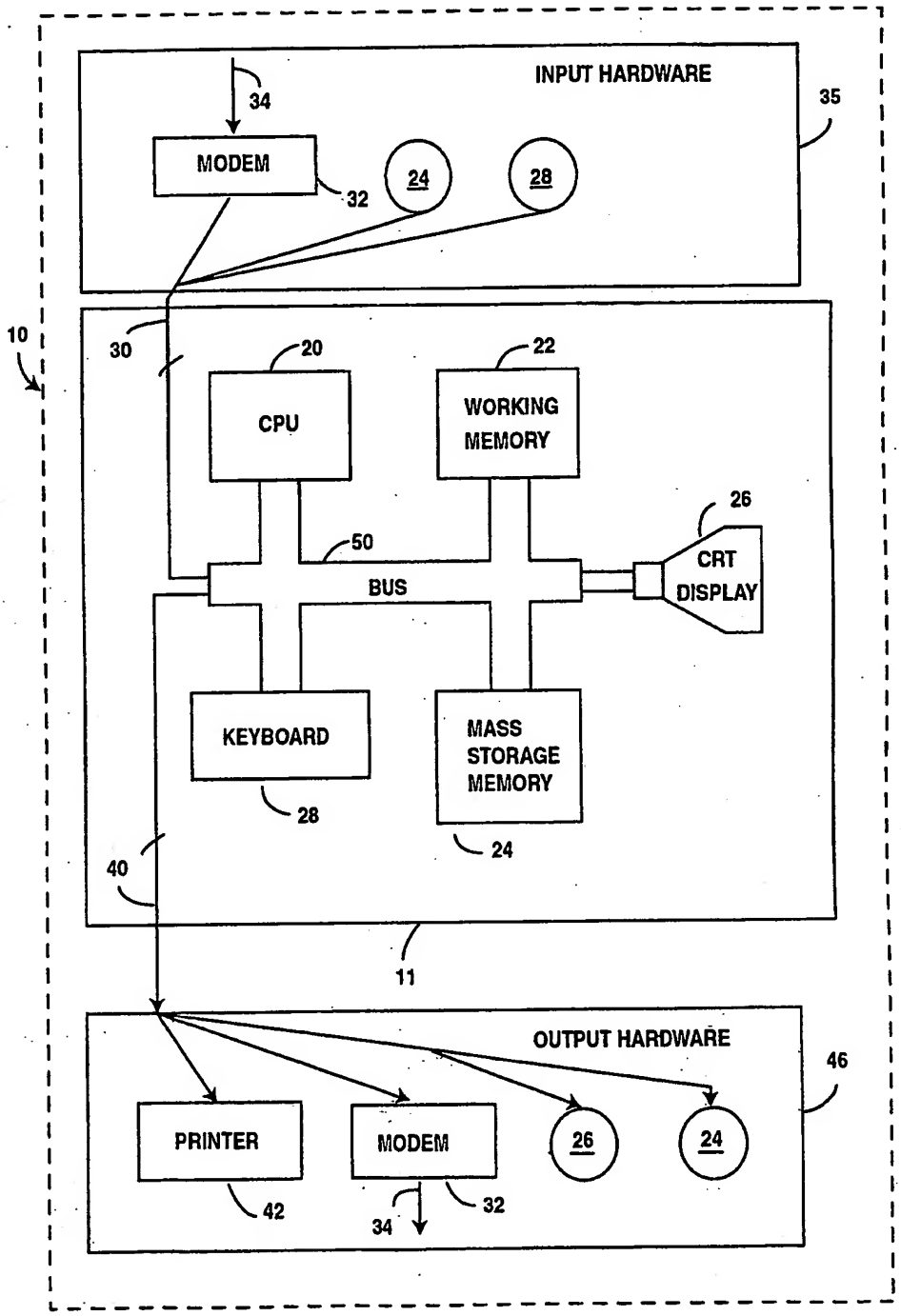
INPUT HARDWARE
35
34
MODEM
32
24
28
10
30
20
CPU
22
WORKING MEMORY
26
50
BUS
CRT DISPLAY
KEYBOARD
28
MASS STORAGE MEMORY
24
40
11
OUTPUT HARDWARE
46
PRINTER
42
MODEM
34
32
26
24

Figure 6

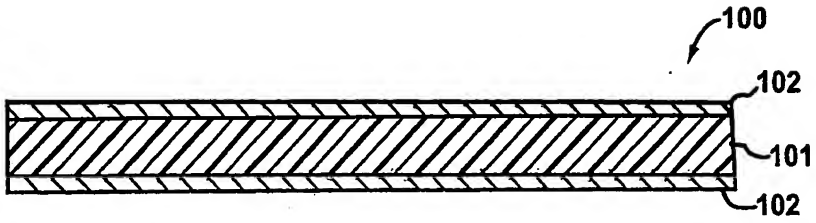

Figure 7

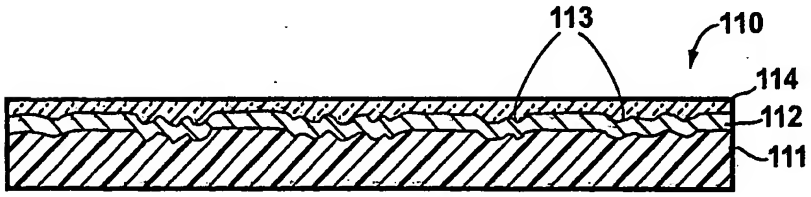

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Figure 8-1

FIGURE 8

	Atom	Type	Resid	#	X	Y	Z	Occ	B	Mol	
ATOM	1	CB	VAL	A 142	-37.661	35.571	55.628	1.00	53.67	A	C
ATOM	2	CG1	VAL	A 142	-36.165	35.793	55.754	1.00	53.67	A	C
ATOM	3	CG2	VAL	A 142	-38.132	34.495	56.617	1.00	53.67	A	C
ATOM	4	C	VAL	A 142	-39.871	36.693	55.479	1.00	64.93	A	C
ATOM	5	O	VAL	A 142	-40.146	36.310	54.347	1.00	64.93	A	O
ATOM	6	N	VAL	A 142	-38.283	37.322	57.310	1.00	64.93	A	N
ATOM	7	CA	VAL	A 142	-38.416	36.897	55.886	1.00	64.93	A	C
ATOM	8	N	THR	A 143	-40.797	36.956	56.397	1.00	71.39	A	N
ATOM	9	CA	THR	A 143	-42.208	36.763	56.113	1.00	71.39	A	C
ATOM	10	CB	THR	A 143	-42.877	35.923	57.204	1.00	106.04	A	C
ATOM	11	OG1	THR	A 143	-42.589	36.496	58.483	1.00	106.04	A	O
ATOM	12	CG2	THR	A 143	-42.372	34.494	57.159	1.00	106.04	A	C
ATOM	13	C	THR	A 143	-43.022	38.033	55.930	1.00	71.39	A	C
ATOM	14	O	THR	A 143	-44.168	37.960	55.502	1.00	71.39	A	O
ATOM	15	N	GLN	A 144	-42.460	39.189	56.261	1.00	40.89	A	N
ATOM	16	CA	GLN	A 144	-43.187	40.454	56.093	1.00	31.51	A	C
ATOM	17	CB	GLN	A 144	-43.386	40.714	54.594	1.00	76.84	A	C
ATOM	18	CG	GLN	A 144	-43.438	42.177	54.203	1.00	76.84	A	C
ATOM	19	CD	GLN	A 144	-43.442	42.396	52.694	1.00	76.84	A	C
ATOM	20	OE1	GLN	A 144	-43.251	43.511	52.225	1.00	24.05	A	O
ATOM	21	NE2	GLN	A 144	-43.668	41.337	51.934	1.00	24.05	A	N
ATOM	22	C	GLN	A 144	-44.555	40.466	56.820	1.00	28.70	A	C
ATOM	23	O	GLN	A 144	-45.599	40.246	56.202	1.00	23.78	A	O
ATOM	24	N	ASP	A 145	-44.555	40.723	58.128	1.00	40.98	A	N
ATOM	25	CA	ASP	A 145	-45.806	40.739	58.890	1.00	40.69	A	C
ATOM	26	CB	ASP	A 145	-45.542	40.962	60.379	1.00	30.05	A	C
ATOM	27	CG	ASP	A 145	-44.514	40.012	60.951	1.00	47.96	A	C
ATOM	28	OD1	ASP	A 145	-44.565	38.810	60.627	1.00	47.96	A	O
ATOM	29	OD2	ASP	A 145	-43.661	40.472	61.744	1.00	47.96	A	O
ATOM	30	C	ASP	A 145	-46.776	41.824	58.426	1.00	38.73	A	C
ATOM	31	O	ASP	A 145	-46.375	42.808	57.797	1.00	37.70	A	O
ATOM	32	N	CYS	A 146	-48.052	41.642	58.753	1.00	23.79	A	N
ATOM	33	CA	CYS	A 146	-49.079	42.616	58.407	1.00	23.36	A	C
ATOM	34	CB	CYS	A 146	-49.316	42.648	56.896	1.00	22.63	A	C
ATOM	35	SG	CYS	A 146	-49.639	41.052	56.158	1.00	33.95	A	S
ATOM	36	C	CYS	A 146	-50.377	42.291	59.126	1.00	24.73	A	C
ATOM	37	O	CYS	A 146	-50.666	41.128	59.407	1.00	22.65	A	O
ATOM	38	N	LEU	A 147	-51.153	43.321	59.436	1.00	19.27	A	N
ATOM	39	CA	LEU	A 147	-52.421	43.130	60.117	1.00	19.27	A	C
ATOM	40	CB	LEU	A 147	-52.263	43.434	61.595	1.00	15.29	A	C
ATOM	41	CG	LEU	A 147	-53.534	43.424	62.433	1.00	15.29	A	C
ATOM	42	CD1	LEU	A 147	-53.144	43.166	63.873	1.00	19.82	A	C
ATOM	43	CD2	LEU	A 147	-54.303	44.739	62.276	1.00	19.82	A	C
ATOM	44	C	LEU	A 147	-53.448	44.055	59.485	1.00	19.27	A	C
ATOM	45	O	LEU	A 147	-53.122	45.185	59.123	1.00	20.43	A	O
ATOM	46	N	GLN	A 148	-54.685	43.580	59.360	1.00	21.50	A	N
ATOM	47	CA	GLN	A 148	-55.730	44.361	58.731	1.00	21.52	A	C
ATOM	48	CB	GLN	A 148	-55.974	43.827	57.313	1.00	18.88	A	C
ATOM	49	CG	GLN	A 148	-56.990	44.599	56.482	1.00	26.34	A	C
ATOM	50	CD	GLN	A 148	-56.992	44.162	55.021	1.00	26.34	A	C
ATOM	51	OE1	GLN	A 148	-56.319	44.757	54.174	1.00	26.34	A	O
ATOM	52	NE2	GLN	A 148	-57.736	43.107	54.724	1.00	26.34	A	N
ATOM	53	C	GLN	A 148	-57.018	44.345	59.521	1.00	22.64	A	C
ATOM	54	O	GLN	A 148	-57.434	43.313	60.033	1.00	23.15	A	O
ATOM	55	N	LEU	A 149	-57.647	45.505	59.613	1.00	14.84	A	N
ATOM	56	CA	LEU	A 149	-58.910	45.653	60.316	1.00	13.57	A	C
ATOM	57	CB	LEU	A 149	-58.790	46.750	61.387	1.00	15.79	A	C
ATOM	58	CG	LEU	A 149	-58.271	46.465	62.808	1.00	15.79	A	C
ATOM	59	CD1	LEU	A 149	-57.622	45.102	62.903	1.00	15.79	A	C
ATOM	60	CD2	LEU	A 149	-57.292	47.556	63.197	1.00	3.09	A	C
ATOM	61	C	LEU	A 149	-59.997	46.047	59.315	1.00	15.22	A	C
ATOM	62	O	LEU	A 149	-59.727	46.748	58.338	1.00	15.61	A	O
ATOM	63	N	ILE	A 150	-61.223	45.595	59.552	1.00	25.38	A	N

Figure 8-2

```
ATOM     64  CA  ILE A 150     -62.343  45.951  58.684  1.00 24.25      A    C
ATOM     65  CB  ILE A 150     -62.794  44.767  57.827  1.00 22.44      A    C
ATOM     66  CG2 ILE A 150     -61.630  44.287  56.976  1.00 22.44      A    C
ATOM     67  CG1 ILE A 150     -63.316  43.643  58.721  1.00 26.56      A    C
ATOM     68  CD1 ILE A 150     -63.647  42.383  57.969  1.00 26.56      A    C
ATOM     69  C   ILE A 150     -63.496  46.414  59.562  1.00 28.35      A    C
ATOM     70  O   ILE A 150     -63.675  45.924  60.678  1.00 29.40      A    O
ATOM     71  N   ALA A 151     -64.270  47.368  59.064  1.00 29.86      A    N
ATOM     72  CA  ALA A 151     -65.386  47.908  59.829  1.00 29.86      A    C
ATOM     73  CB  ALA A 151     -66.145  48.933  58.985  1.00 18.03      A    C
ATOM     74  C   ALA A 151     -66.342  46.837  60.361  1.00 29.86      A    C
ATOM     75  O   ALA A 151     -66.608  45.829  59.701  1.00 29.86      A    O
ATOM     76  N   ASP A 152     -66.838  47.065  61.574  1.00 30.71      A    N
ATOM     77  CA  ASP A 152     -67.770  46.142  62.219  1.00 30.71      A    C
ATOM     78  CB  ASP A 152     -67.434  46.010  63.707  1.00 54.66      A    C
ATOM     79  CG  ASP A 152     -68.400  45.111  64.442  1.00 54.66      A    C
ATOM     80  OD1 ASP A 152     -68.315  45.053  65.682  1.00 54.66      A    O
ATOM     81  OD2 ASP A 152     -69.239  44.463  63.781  1.00 54.66      A    O
ATOM     82  C   ASP A 152     -69.184  46.684  62.056  1.00 30.71      A    C
ATOM     83  O   ASP A 152     -69.607  47.562  62.805  1.00 30.71      A    O
ATOM     84  N   SER A 153     -69.907  46.157  61.073  1.00 51.28      A    N
ATOM     85  CA  SER A 153     -71.260  46.609  60.796  1.00 51.28      A    C
ATOM     86  CB  SER A 153     -71.732  46.029  59.469  1.00 80.67      A    C
ATOM     87  OG  SER A 153     -71.611  44.622  59.485  1.00 80.67      A    O
ATOM     88  C   SER A 153     -72.244  46.234  61.893  1.00 51.28      A    C
ATOM     89  O   SER A 153     -73.426  46.550  61.808  1.00 51.28      A    O
ATOM     90  N   GLU A 154     -71.753  45.577  62.933  1.00 52.39      A    N
ATOM     91  CA  GLU A 154     -72.607  45.149  64.029  1.00 52.39      A    C
ATOM     92  CB  GLU A 154     -72.128  43.795  64.549  1.00 97.36      A    C
ATOM     93  CG  GLU A 154     -73.245  42.857  64.911  1.00 97.36      A    C
ATOM     94  CD  GLU A 154     -74.029  42.444  63.693  1.00 97.36      A    C
ATOM     95  OE1 GLU A 154     -73.460  41.721  62.849  1.00 97.36      A    O
ATOM     96  OE2 GLU A 154     -75.205  42.850  63.570  1.00 97.36      A    O
ATOM     97  C   GLU A 154     -72.620  46.142  65.183  1.00 52.39      A    C
ATOM     98  O   GLU A 154     -73.567  46.182  65.961  1.00 52.39      A    O
ATOM     99  N   THR A 155     -71.569  46.947  65.286  1.00 51.65      A    N
ATOM    100  CA  THR A 155     -71.440  47.913  66.371  1.00 51.65      A    C
ATOM    101  CB  THR A 155     -70.086  47.764  67.033  1.00 22.51      A    C
ATOM    102  OG1 THR A 155     -69.965  46.433  67.531  1.00 22.51      A    O
ATOM    103  CG2 THR A 155     -69.910  48.764  68.167  1.00 22.51      A    C
ATOM    104  C   THR A 155     -71.573  49.359  65.955  1.00 51.65      A    C
ATOM    105  O   THR A 155     -71.157  49.738  64.869  1.00 51.65      A    O
ATOM    106  N   PRO A 156     -72.146  50.197  66.827  1.00 45.18      A    N
ATOM    107  CD  PRO A 156     -72.778  49.889  68.119  1.00 37.21      A    C
ATOM    108  CA  PRO A 156     -72.303  51.617  66.501  1.00 45.18      A    C
ATOM    109  CB  PRO A 156     -73.235  52.116  67.597  1.00 37.21      A    C
ATOM    110  CG  PRO A 156     -72.851  51.257  68.756  1.00 37.21      A    C
ATOM    111  C   PRO A 156     -70.953  52.314  66.541  1.00 45.18      A    C
ATOM    112  O   PRO A 156     -70.050  51.884  67.269  1.00 45.18      A    O
ATOM    113  N   THR A 157     -70.817  53.386  65.767  1.00 53.48      A    N
ATOM    114  CA  THR A 157     -69.564  54.129  65.727  1.00 53.48      A    C
ATOM    115  CB  THR A 157     -69.635  55.275  64.718  1.00 49.94      A    C
ATOM    116  OG1 THR A 157     -70.549  56.274  65.188  1.00 49.94      A    O
ATOM    117  CG2 THR A 157     -70.113  54.751  63.376  1.00 49.94      A    C
ATOM    118  C   THR A 157     -69.256  54.699  67.102  1.00 53.48      A    C
ATOM    119  O   THR A 157     -70.159  55.061  67.850  1.00 53.48      A    O
ATOM    120  N   ILE A 158     -67.975  54.777  67.428  1.00 53.90      A    N
ATOM    121  CA  ILE A 158     -67.540  55.292  68.719  1.00 53.90      A    C
ATOM    122  CB  ILE A 158     -66.208  54.671  69.109  1.00 16.97      A    C
ATOM    123  CG2 ILE A 158     -65.813  55.124  70.492  1.00 16.97      A    C
ATOM    124  CG1 ILE A 158     -66.316  53.149  69.033  1.00 16.97      A    C
ATOM    125  CD1 ILE A 158     -65.020  52.427  69.304  1.00 16.97      A    C
ATOM    126  C   ILE A 158     -67.369  56.811  68.752  1.00 53.90      A    C
ATOM    127  O   ILE A 158     -66.698  57.381  67.897  1.00 53.90      A    O
ATOM    128  N   GLN A 159     -67.968  57.457  69.748  1.00 53.22      A    N
ATOM    129  CA  GLN A 159     -67.862  58.905  69.902  1.00 53.22      A    C
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Figure 8-3

ATOM	130	CB	GLN	A	159	-69.221	59.494	70.224	1.00	50.53	A C
ATOM	131	CG	GLN	A	159	-70.211	59.251	69.128	1.00	50.53	A C
ATOM	132	CD	GLN	A	159	-69.738	59.813	67.817	1.00	50.53	A C
ATOM	133	OE1	GLN	A	159	-70.078	59.295	66.761	1.00	50.53	A O
ATOM	134	NE2	GLN	A	159	-68.956	60.886	67.871	1.00	50.53	A N
ATOM	135	C	GLN	A	159	-66.893	59.200	71.029	1.00	53.22	A C
ATOM	136	O	GLN	A	159	-67.007	58.632	72.111	1.00	53.22	A O
ATOM	137	N	LYS	A	160	-65.940	60.089	70.788	1.00	85.03	A N
ATOM	138	CA	LYS	A	160	-64.954	60.389	71.813	1.00	85.03	A C
ATOM	139	CB	LYS	A	160	-64.040	59.174	71.992	1.00	157.41	A C
ATOM	140	CG	LYS	A	160	-63.025	59.280	73.112	1.00	130.79	A C
ATOM	141	CD	LYS	A	160	-62.268	57.968	73.261	1.00	130.79	A C
ATOM	142	CE	LYS	A	160	-61.315	57.993	74.446	1.00	130.79	A C
ATOM	143	NZ	LYS	A	160	-60.626	56.683	74.637	1.00	130.79	A N
ATOM	144	C	LYS	A	160	-64.125	61.619	71.465	1.00	85.03	A C
ATOM	145	O	LYS	A	160	-63.426	61.644	70.454	1.00	85.03	A O
ATOM	146	N	GLY	A	161	-64.209	62.640	72.310	1.00	94.07	A N
ATOM	147	CA	GLY	A	161	-63.451	63.855	72.083	1.00	94.07	A C
ATOM	148	C	GLY	A	161	-63.803	64.578	70.802	1.00	94.07	A C
ATOM	149	O	GLY	A	161	-62.911	65.035	70.089	1.00	94.07	A O
ATOM	150	N	SER	A	162	-65.097	64.680	70.503	1.00	49.96	A N
ATOM	151	CA	SER	A	162	-65.563	65.370	69.301	1.00	49.96	A C
ATOM	152	CB	SER	A	162	-65.005	66.800	69.263	1.00	73.37	A C
ATOM	153	OG	SER	A	162	-65.514	67.520	68.154	1.00	73.37	A O
ATOM	154	C	SER	A	162	-65.187	64.631	68.011	1.00	49.96	A C
ATOM	155	O	SER	A	162	-65.564	65.045	66.911	1.00	49.96	A O
ATOM	156	N	TYR	A	163	-64.426	63.549	68.146	1.00	46.96	A N
ATOM	157	CA	TYR	A	163	-64.036	62.741	66.993	1.00	46.96	A C
ATOM	158	CB	TYR	A	163	-62.609	62.192	67.135	1.00	62.09	A C
ATOM	159	CG	TYR	A	163	-61.475	63.138	66.817	1.00	62.09	A C
ATOM	160	CD1	TYR	A	163	-61.695	64.326	66.129	1.00	62.09	A C
ATOM	161	CE1	TYR	A	163	-60.638	65.171	65.801	1.00	62.09	A C
ATOM	162	CD2	TYR	A	163	-60.163	62.815	67.173	1.00	62.09	A C
ATOM	163	CE2	TYR	A	163	-59.098	63.647	66.851	1.00	62.09	A C
ATOM	164	CZ	TYR	A	163	-59.342	64.825	66.165	1.00	62.09	A C
ATOM	165	OH	TYR	A	163	-58.291	65.655	65.852	1.00	62.09	A O
ATOM	166	C	TYR	A	163	-64.979	61.550	66.958	1.00	46.96	A C
ATOM	167	O	TYR	A	163	-65.780	61.344	67.873	1.00	46.96	A O
ATOM	168	N	THR	A	164	-64.864	60.759	65.900	1.00	47.11	A N
ATOM	169	CA	THR	A	164	-65.669	59.559	65.748	1.00	47.11	A C
ATOM	170	CB	THR	A	164	-66.867	59.810	64.823	1.00	52.71	A C
ATOM	171	OG1	THR	A	164	-67.483	58.563	64.486	1.00	52.71	A O
ATOM	172	CG2	THR	A	164	-66.426	60.506	63.575	1.00	52.71	A C
ATOM	173	C	THR	A	164	-64.775	58.457	65.189	1.00	47.11	A C
ATOM	174	O	THR	A	164	-64.088	58.648	64.183	1.00	47.11	A O
ATOM	175	N	PHE	A	165	-64.773	57.313	65.866	1.00	42.07	A N
ATOM	176	CA	PHE	A	165	-63.947	56.182	65.470	1.00	42.07	A C
ATOM	177	CB	PHE	A	165	-63.070	55.746	66.641	1.00	30.48	A C
ATOM	178	CG	PHE	A	165	-62.256	56.857	67.219	1.00	30.48	A C
ATOM	179	CD1	PHE	A	165	-62.848	57.807	68.048	1.00	30.48	A C
ATOM	180	CD2	PHE	A	165	-60.908	56.985	66.897	1.00	30.48	A C
ATOM	181	CE1	PHE	A	165	-62.111	58.870	68.546	1.00	30.48	A C
ATOM	182	CE2	PHE	A	165	-60.161	58.039	67.385	1.00	30.48	A C
ATOM	183	CZ	PHE	A	165	-60.762	58.989	68.213	1.00	30.48	A C
ATOM	184	C	PHE	A	165	-64.787	55.013	65.015	1.00	42.07	A C
ATOM	185	O	PHE	A	165	-65.849	54.754	65.572	1.00	42.07	A O
ATOM	186	N	VAL	A	166	-64.311	54.295	64.006	1.00	29.20	A N
ATOM	187	CA	VAL	A	166	-65.069	53.157	63.522	1.00	29.20	A C
ATOM	188	CB	VAL	A	166	-64.831	52.879	61.989	1.00	8.90	A C
ATOM	189	CG1	VAL	A	166	-63.991	53.963	61.376	1.00	8.90	A C
ATOM	190	CG2	VAL	A	166	-64.180	51.533	61.778	1.00	8.90	A C
ATOM	191	C	VAL	A	166	-64.709	51.927	64.336	1.00	29.20	A C
ATOM	192	O	VAL	A	166	-63.572	51.756	64.764	1.00	29.20	A O
ATOM	193	N	PRO	A	167	-65.698	51.072	64.589	1.00	33.78	A N
ATOM	194	CD	PRO	A	167	-67.116	51.320	64.294	1.00	30.44	A C
ATOM	195	CA	PRO	A	167	-65.533	49.833	65.347	1.00	33.78	A C

Figure 8-4

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ATOM  196  CB  PRO A 167     -66.971  49.378  65.583  1.00 30.44      A    C
ATOM  197  CG  PRO A 167     -67.780  50.629  65.437  1.00 30.44      A    C
ATOM  198  C   PRO A 167     -64.790  48.855  64.444  1.00 33.78      A    C
ATOM  199  O   PRO A 167     -65.281  48.508  63.364  1.00 33.78      A    O
ATOM  200  N   TRP A 168     -63.614  48.412  64.863  1.00 22.29      A    N
ATOM  201  CA  TRP A 168     -62.863  47.485  64.029  1.00 23.52      A    C
ATOM  202  CB  TRP A 168     -61.358  47.795  64.060  1.00 32.67      A    C
ATOM  203  CG  TRP A 168     -61.012  49.125  63.512  1.00 26.93      A    C
ATOM  204  CD2 TRP A 168     -61.287  49.612  62.194  1.00 27.50      A    C
ATOM  205  CE2 TRP A 168     -60.848  50.953  62.146  1.00 26.89      A    C
ATOM  206  CE3 TRP A 168     -61.865  49.050  61.048  1.00 28.63      A    C
ATOM  207  CD1 TRP A 168     -60.432  50.145  64.184  1.00 29.78      A    C
ATOM  208  NE1 TRP A 168     -60.330  51.251  63.376  1.00 32.76      A    N
ATOM  209  CZ2 TRP A 168     -60.966  51.748  60.994  1.00 26.65      A    C
ATOM  210  CZ3 TRP A 168     -61.981  49.845  59.896  1.00 32.39      A    C
ATOM  211  CH2 TRP A 168     -61.533  51.176  59.884  1.00 30.60      A    C
ATOM  212  C   TRP A 168     -63.062  46.035  64.407  1.00 23.83      A    C
ATOM  213  O   TRP A 168     -63.273  45.694  65.570  1.00 25.49      A    O
ATOM  214  N   LEU A 169     -62.972  45.189  63.391  1.00 36.72      A    N
ATOM  215  CA  LEU A 169     -63.095  43.753  63.538  1.00 37.19      A    C
ATOM  216  CB  LEU A 169     -64.337  43.287  62.795  1.00 74.36      A    C
ATOM  217  CG  LEU A 169     -65.249  42.349  63.567  1.00 74.36      A    C
ATOM  218  CD1 LEU A 169     -66.624  42.356  62.931  1.00 74.36      A    C
ATOM  219  CD2 LEU A 169     -64.636  40.950  63.582  1.00 74.36      A    C
ATOM  220  C   LEU A 169     -61.821  43.244  62.870  1.00 37.82      A    C
ATOM  221  O   LEU A 169     -61.458  43.712  61.794  1.00 36.17      A    O
ATOM  222  N   LEU A 170     -61.125  42.313  63.503  1.00 28.62      A    N
ATOM  223  CA  LEU A 170     -59.885  41.822  62.924  1.00 28.62      A    C
ATOM  224  CB  LEU A 170     -59.115  40.973  63.931  1.00 10.68      A    C
ATOM  225  CG  LEU A 170     -57.865  40.344  63.310  1.00 10.68      A    C
ATOM  226  CD1 LEU A 170     -56.850  41.432  63.024  1.00 10.68      A    C
ATOM  227  CD2 LEU A 170     -57.277  39.313  64.235  1.00 10.68      A    C
ATOM  228  C   LEU A 170     -60.066  41.018  61.645  1.00 28.62      A    C
ATOM  229  O   LEU A 170     -60.596  39.911  61.671  1.00 29.37      A    O
ATOM  230  N   SER A 171     -59.618  41.578  60.527  1.00 35.51      A    N
ATOM  231  CA  SER A 171     -59.707  40.894  59.248  1.00 35.52      A    C
ATOM  232  CB  SER A 171     -59.283  41.818  58.108  1.00 25.81      A    C
ATOM  233  OG  SER A 171     -59.010  41.084  56.927  1.00 25.81      A    O
ATOM  234  C   SER A 171     -58.748  39.735  59.329  1.00 33.91      A    C
ATOM  235  O   SER A 171     -59.115  38.594  59.098  1.00 33.61      A    O
ATOM  236  N   PHE A 172     -57.504  40.036  59.661  1.00 25.50      A    N
ATOM  237  CA  PHE A 172     -56.507  38.992  59.789  1.00 22.02      A    C
ATOM  238  CB  PHE A 172     -56.197  38.369  58.422  1.00 54.88      A    C
ATOM  239  CG  PHE A 172     -55.253  39.180  57.593  1.00 33.54      A    C
ATOM  240  CD1 PHE A 172     -53.880  39.119  57.813  1.00 33.54      A    C
ATOM  241  CD2 PHE A 172     -55.735  40.048  56.620  1.00 33.54      A    C
ATOM  242  CE1 PHE A 172     -52.999  39.919  57.077  1.00 33.54      A    C
ATOM  243  CE2 PHE A 172     -54.861  40.855  55.873  1.00 33.54      A    C
ATOM  244  CZ  PHE A 172     -53.490  40.789  56.107  1.00 33.54      A    C
ATOM  245  C   PHE A 172     -55.246  39.590  60.393  1.00 23.56      A    C
ATOM  246  O   PHE A 172     -54.994  40.780  60.272  1.00 24.35      A    O
ATOM  247  N   LYS A 173     -54.463  38.751  61.053  1.00 33.79      A    N
ATOM  248  CA  LYS A 173     -53.216  39.166  61.670  1.00 32.83      A    C
ATOM  249  CB  LYS A 173     -53.335  39.093  63.184  1.00 11.51      A    C
ATOM  250  CG  LYS A 173     -52.026  39.214  63.936  1.00 30.51      A    C
ATOM  251  CD  LYS A 173     -52.259  39.002  65.429  1.00 30.51      A    C
ATOM  252  CE  LYS A 173     -50.982  39.180  66.224  1.00 30.51      A    C
ATOM  253  NZ  LYS A 173     -49.939  38.234  65.767  1.00 30.51      A    N
ATOM  254  C   LYS A 173     -52.202  38.156  61.185  1.00 34.61      A    C
ATOM  255  O   LYS A 173     -52.443  36.958  61.236  1.00 36.10      A    O
ATOM  256  N   ARG A 174     -51.073  38.634  60.702  1.00 29.00      A    N
ATOM  257  CA  ARG A 174     -50.059  37.741  60.190  1.00 29.00      A    C
ATOM  258  CB  ARG A 174     -50.042  37.798  58.663  1.00 30.87      A    C
ATOM  259  CG  ARG A 174     -49.059  36.854  58.038  1.00 30.87      A    C
ATOM  260  CD  ARG A 174     -48.780  37.209  56.596  1.00 30.87      A    C
ATOM  261  NE  ARG A 174     -47.897  36.232  55.957  1.00 30.87      A    N
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Figure 8-5

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ATOM  262  CZ  ARG A 174     -47.023  36.534  55.004  1.00 30.87      A    C
ATOM  263  NH1 ARG A 174     -46.913  37.788  54.584  1.00 30.87      A    N
ATOM  264  NH2 ARG A 174     -46.261  35.586  54.469  1.00 30.87      A    N
ATOM  265  C   ARG A 174     -48.711  38.155  60.726  1.00 29.00      A    C
ATOM  266  O   ARG A 174     -48.194  39.208  60.354  1.00 29.00      A    O
ATOM  267  N   GLY A 175     -48.145  37.344  61.607  1.00 28.55      A    N
ATOM  268  CA  GLY A 175     -46.843  37.678  62.151  1.00 28.55      A    C
ATOM  269  C   GLY A 175     -46.837  38.184  63.582  1.00 28.55      A    C
ATOM  270  O   GLY A 175     -47.894  38.321  64.212  1.00 28.55      A    O
ATOM  271  N   SER A 176     -45.631  38.468  64.079  1.00 51.12      A    N
ATOM  272  CA  SER A 176     -45.408  38.943  65.440  1.00 51.12      A    C
ATOM  273  CB  SER A 176     -43.987  38.581  65.878  1.00 92.52      A    C
ATOM  274  OG  SER A 176     -43.045  38.907  64.871  1.00 92.52      A    O
ATOM  275  C   SER A 176     -45.640  40.440  65.617  1.00 51.12      A    C
ATOM  276  O   SER A 176     -46.406  40.845  66.487  1.00 51.12      A    O
ATOM  277  N   ALA A 177     -44.970  41.259  64.809  1.00 69.88      A    N
ATOM  278  CA  ALA A 177     -45.136  42.708  64.896  1.00 69.88      A    C
ATOM  279  CB  ALA A 177     -44.214  43.403  63.917  1.00 37.52      A    C
ATOM  280  C   ALA A 177     -46.572  43.002  64.535  1.00 69.88      A    C
ATOM  281  O   ALA A 177     -47.185  42.244  63.787  1.00 69.88      A    O
ATOM  282  N   LEU A 178     -47.120  44.090  65.053  1.00 39.66      A    N
ATOM  283  CA  LEU A 178     -48.505  44.424  64.728  1.00 39.66      A    C
ATOM  284  CB  LEU A 178     -48.677  44.522  63.211  1.00 37.11      A    C
ATOM  285  CG  LEU A 178     -48.535  45.860  62.485  1.00 18.18      A    C
ATOM  286  CD1 LEU A 178     -47.517  46.765  63.155  1.00 18.18      A    C
ATOM  287  CD2 LEU A 178     -48.136  45.570  61.054  1.00 18.18      A    C
ATOM  288  C   LEU A 178     -49.550  43.440  65.262  1.00 39.66      A    C
ATOM  289  O   LEU A 178     -49.569  42.270  64.896  1.00 39.66      A    O
ATOM  290  N   GLU A 179     -50.414  43.928  66.139  1.00 32.97      A    N
ATOM  291  CA  GLU A 179     -51.501  43.137  66.689  1.00 32.97      A    C
ATOM  292  CB  GLU A 179     -51.042  42.267  67.866  1.00 86.85      A    C
ATOM  293  CG  GLU A 179     -50.361  42.987  68.999  1.00 36.05      A    C
ATOM  294  CD  GLU A 179     -49.782  42.024  70.038  1.00 36.05      A    C
ATOM  295  OE1 GLU A 179     -48.898  41.216  69.670  1.00 36.05      A    O
ATOM  296  OE2 GLU A 179     -50.208  42.078  71.216  1.00 36.05      A    O
ATOM  297  C   GLU A 179     -52.529  44.177  67.103  1.00 32.97      A    C
ATOM  298  O   GLU A 179     -52.186  45.345  67.260  1.00 32.97      A    O
ATOM  299  N   GLU A 180     -53.789  43.777  67.231  1.00 29.82      A    N
ATOM  300  CA  GLU A 180     -54.846  44.716  67.592  1.00 29.82      A    C
ATOM  301  CB  GLU A 180     -56.191  44.209  67.077  1.00 51.75      A    C
ATOM  302  CG  GLU A 180     -57.386  44.989  67.571  1.00 51.75      A    C
ATOM  303  CD  GLU A 180     -58.681  44.480  66.964  1.00 51.75      A    C
ATOM  304  OE1 GLU A 180     -58.807  43.245  66.806  1.00 61.54      A    O
ATOM  305  OE2 GLU A 180     -59.577  45.302  66.650  1.00 61.54      A    O
ATOM  306  C   GLU A 180     -54.919  44.967  69.095  1.00 29.82      A    C
ATOM  307  O   GLU A 180     -55.082  44.039  69.886  1.00 29.82      A    O
ATOM  308  N   LYS A 181     -54.794  46.235  69.481  1.00 56.40      A    N
ATOM  309  CA  LYS A 181     -54.840  46.615  70.882  1.00 56.40      A    C
ATOM  310  CB  LYS A 181     -53.946  47.822  71.139  1.00 58.14      A    C
ATOM  311  CG  LYS A 181     -53.863  48.256  72.595  1.00 58.14      A    C
ATOM  312  CD  LYS A 181     -53.075  47.278  73.423  1.00 58.14      A    C
ATOM  313  CE  LYS A 181     -52.771  47.868  74.786  1.00 58.14      A    C
ATOM  314  NZ  LYS A 181     -51.801  47.031  75.555  1.00 58.14      A    N
ATOM  315  C   LYS A 181     -56.254  46.950  71.290  1.00 56.40      A    C
ATOM  316  O   LYS A 181     -57.099  46.068  71.408  1.00 56.40      A    O
ATOM  317  N   GLU A 182     -56.523  48.229  71.495  1.00 28.88      A    N
ATOM  318  CA  GLU A 182     -57.848  48.640  71.923  1.00 28.88      A    C
ATOM  319  CB  GLU A 182     -57.751  49.537  73.150  1.00103.21      A    C
ATOM  320  CG  GLU A 182     -56.879  48.952  74.236  1.00103.21      A    C
ATOM  321  CD  GLU A 182     -56.787  49.845  75.443  1.00103.21      A    C
ATOM  322  OE1 GLU A 182     -57.784  49.928  76.191  1.00103.21      A    O
ATOM  323  OE2 GLU A 182     -55.721  50.471  75.635  1.00103.21      A    O
ATOM  324  C   GLU A 182     -58.501  49.378  70.784  1.00 28.88      A    C
ATOM  325  O   GLU A 182     -58.672  50.598  70.830  1.00 28.88      A    O
ATOM  326  N   ASN A 183     -58.865  48.613  69.760  1.00 23.33      A    N
ATOM  327  CA  ASN A 183     -59.495  49.145  68.564  1.00 23.33      A    C
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Figure 8-6

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ATOM   328  CB  ASN A 183     -60.708  49.990  68.905  1.00 28.84      A    C
ATOM   329  CG  ASN A 183     -61.568  50.243  67.706  1.00 28.84      A    C
ATOM   330  OD1 ASN A 183     -62.095  49.308  67.099  1.00 28.84      A    O
ATOM   331  ND2 ASN A 183     -61.710  51.509  67.339  1.00 28.84      A    N
ATOM   332  C   ASN A 183     -58.504  49.980  67.776  1.00 23.33      A    C
ATOM   333  O   ASN A 183     -58.881  50.845  66.986  1.00 23.33      A    O
ATOM   334  N   LYS A 184     -57.228  49.716  68.016  1.00 29.45      A    N
ATOM   335  CA  LYS A 184     -56.163  50.393  67.303  1.00 29.45      A    C
ATOM   336  CB  LYS A 184     -55.649  51.594  68.104  1.00 42.45      A    C
ATOM   337  CG  LYS A 184     -55.939  51.547  69.585  1.00 42.45      A    C
ATOM   338  CD  LYS A 184     -55.631  52.893  70.208  1.00 42.45      A    C
ATOM   339  CE  LYS A 184     -55.883  52.882  71.698  1.00 42.45      A    C
ATOM   340  NZ  LYS A 184     -55.512  54.185  72.319  1.00 42.45      A    N
ATOM   341  C   LYS A 184     -55.042  49.393  67.014  1.00 29.45      A    C
ATOM   342  O   LYS A 184     -54.968  48.337  67.639  1.00 29.45      A    O
ATOM   343  N   ILE A 185     -54.189  49.713  66.049  1.00 21.08      A    N
ATOM   344  CA  ILE A 185     -53.095  48.827  65.695  1.00 19.57      A    C
ATOM   345  CB  ILE A 185     -52.686  49.022  64.235  1.00 16.09      A    C
ATOM   346  CG2 ILE A 185     -51.473  48.154  63.922  1.00 16.09      A    C
ATOM   347  CG1 ILE A 185     -53.875  48.706  63.327  1.00 16.09      A    C
ATOM   348  CD1 ILE A 185     -53.632  49.047  61.888  1.00 16.09      A    C
ATOM   349  C   ILE A 185     -51.900  49.104  66.584  1.00 20.03      A    C
ATOM   350  O   ILE A 185     -51.420  50.230  66.652  1.00 23.22      A    O
ATOM   351  N   LEU A 186     -51.425  48.066  67.265  1.00 15.87      A    N
ATOM   352  CA  LEU A 186     -50.284  48.176  68.166  1.00 15.07      A    C
ATOM   353  CB  LEU A 186     -50.564  47.406  69.456  1.00 31.54      A    C
ATOM   354  CG  LEU A 186     -49.363  47.286  70.396  1.00 31.54      A    C
ATOM   355  CD1 LEU A 186     -48.818  48.669  70.727  1.00 31.54      A    C
ATOM   356  CD2 LEU A 186     -49.780  46.574  71.653  1.00 31.54      A    C
ATOM   357  C   LEU A 186     -48.991  47.651  67.532  1.00 12.21      A    C
ATOM   358  O   LEU A 186     -48.919  46.502  67.099  1.00 19.14      A    O
ATOM   359  N   VAL A 187     -47.970  48.504  67.476  1.00 30.70      A    N
ATOM   360  CA  VAL A 187     -46.695  48.116  66.895  1.00 32.20      A    C
ATOM   361  CB  VAL A 187     -45.865  49.338  66.484  1.00 12.40      A    C
ATOM   362  CG1 VAL A 187     -44.507  48.883  65.964  1.00 10.45      A    C
ATOM   363  CG2 VAL A 187     -46.588  50.127  65.419  1.00 19.46      A    C
ATOM   364  C   VAL A 187     -45.900  47.328  67.918  1.00 34.41      A    C
ATOM   365  O   VAL A 187     -45.653  47.810  69.022  1.00 36.73      A    O
ATOM   366  N   LYS A 188     -45.490  46.119  67.550  1.00 28.67      A    N
ATOM   367  CA  LYS A 188     -44.716  45.283  68.463  1.00 30.56      A    C
ATOM   368  CB  LYS A 188     -45.304  43.868  68.498  1.00 48.12      A    C
ATOM   369  CG  LYS A 188     -46.439  43.707  69.498  1.00 52.10      A    C
ATOM   370  CD  LYS A 188     -45.920  43.921  70.916  1.00 57.39      A    C
ATOM   371  CE  LYS A 188     -47.037  43.988  71.945  1.00 62.35      A    C
ATOM   372  NZ  LYS A 188     -47.761  42.697  72.110  1.00 47.52      A    N
ATOM   373  C   LYS A 188     -43.220  45.230  68.145  1.00 28.37      A    C
ATOM   374  O   LYS A 188     -42.413  44.878  68.998  1.00 30.95      A    O
ATOM   375  N   GLU A 189     -42.855  45.585  66.919  1.00 30.42      A    N
ATOM   376  CA  GLU A 189     -41.456  45.584  66.509  1.00 33.11      A    C
ATOM   377  CB  GLU A 189     -41.155  44.394  65.609  1.00 71.98      A    C
ATOM   378  CG  GLU A 189     -41.531  43.058  66.193  1.00 71.98      A    C
ATOM   379  CD  GLU A 189     -41.245  41.921  65.237  1.00 71.98      A    C
ATOM   380  OE1 GLU A 189     -41.576  40.768  65.580  1.00 71.98      A    O
ATOM   381  OE2 GLU A 189     -40.687  42.178  64.145  1.00 71.98      A    O
ATOM   382  C   GLU A 189     -41.183  46.851  65.732  1.00 30.63      A    C
ATOM   383  O   GLU A 189     -41.741  47.060  64.659  1.00 31.19      A    O
ATOM   384  N   THR A 190     -40.318  47.695  66.265  1.00 33.28      A    N
ATOM   385  CA  THR A 190     -40.009  48.936  65.590  1.00 34.85      A    C
ATOM   386  CB  THR A 190     -39.043  49.777  66.446  1.00 29.24      A    C
ATOM   387  OG1 THR A 190     -37.987  50.287  65.626  1.00 29.24      A    O
ATOM   388  CG2 THR A 190     -38.470  48.942  67.565  1.00 29.24      A    C
ATOM   389  C   THR A 190     -39.434  48.664  64.197  1.00 33.33      A    C
ATOM   390  O   THR A 190     -38.677  47.713  64.004  1.00 33.98      A    O
ATOM   391  N   GLY A 191     -39.831  49.486  63.225  1.00 21.04      A    N
ATOM   392  CA  GLY A 191     -39.357  49.328  61.857  1.00 22.49      A    C
ATOM   393  C   GLY A 191     -40.143  50.201  60.889  1.00 22.69      A    C
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Figure 8-7

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ATOM   394  O   GLY A 191     -40.824  51.131  61.316  1.00 25.40      A    O
ATOM   395  N   TYR A 192     -40.049  49.916  59.591  1.00 24.18      A    N
ATOM   396  CA  TYR A 192     -40.780  50.691  58.588  1.00 23.72      A    C
ATOM   397  CB  TYR A 192     -39.943  50.905  57.328  1.00 31.66      A    C
ATOM   398  CG  TYR A 192     -38.821  51.886  57.533  1.00 31.66      A    C
ATOM   399  CD1 TYR A 192     -37.649  51.499  58.168  1.00 31.66      A    C
ATOM   400  CE1 TYR A 192     -36.634  52.395  58.410  1.00 31.66      A    C
ATOM   401  CD2 TYR A 192     -38.948  53.211  57.135  1.00 31.66      A    C
ATOM   402  CE2 TYR A 192     -37.938  54.123  57.374  1.00 31.66      A    C
ATOM   403  CZ  TYR A 192     -36.779  53.705  58.017  1.00 31.66      A    C
ATOM   404  OH  TYR A 192     -35.770  54.595  58.305  1.00 31.66      A    O
ATOM   405  C   TYR A 192     -42.082  50.004  58.217  1.00 21.96      A    C
ATOM   406  O   TYR A 192     -42.121  48.793  57.998  1.00 23.01      A    O
ATOM   407  N   PHE A 193     -43.156  50.780  58.147  1.00 36.55      A    N
ATOM   408  CA  PHE A 193     -44.445  50.202  57.823  1.00 36.55      A    C
ATOM   409  CB  PHE A 193     -45.322  50.103  59.076  1.00 29.69      A    C
ATOM   410  CG  PHE A 193     -44.782  49.202  60.154  1.00 29.69      A    C
ATOM   411  CD1 PHE A 193     -43.746  49.624  60.977  1.00 29.69      A    C
ATOM   412  CD2 PHE A 193     -45.350  47.945  60.379  1.00 29.69      A    C
ATOM   413  CE1 PHE A 193     -43.281  48.811  62.015  1.00 29.69      A    C
ATOM   414  CE2 PHE A 193     -44.899  47.125  61.410  1.00 29.69      A    C
ATOM   415  CZ  PHE A 193     -43.862  47.557  62.232  1.00 29.69      A    C
ATOM   416  C   PHE A 193     -45.234  50.961  56.765  1.00 36.55      A    C
ATOM   417  O   PHE A 193     -45.228  52.194  56.715  1.00 36.55      A    O
ATOM   418  N   PHE A 194     -45.911  50.194  55.916  1.00 20.05      A    N
ATOM   419  CA  PHE A 194     -46.776  50.741  54.883  1.00 20.53      A    C
ATOM   420  CB  PHE A 194     -46.816  49.805  53.675  1.00 16.87      A    C
ATOM   421  CG  PHE A 194     -47.806  50.211  52.632  1.00 16.87      A    C
ATOM   422  CD1 PHE A 194     -47.624  51.369  51.893  1.00 16.87      A    C
ATOM   423  CD2 PHE A 194     -48.954  49.456  52.420  1.00 16.87      A    C
ATOM   424  CE1 PHE A 194     -48.578  51.770  50.964  1.00 16.87      A    C
ATOM   425  CE2 PHE A 194     -49.910  49.850  51.496  1.00 16.87      A    C
ATOM   426  CZ  PHE A 194     -49.722  51.007  50.769  1.00 16.87      A    C
ATOM   427  C   PHE A 194     -48.121  50.743  55.597  1.00 20.92      A    C
ATOM   428  O   PHE A 194     -48.598  49.695  56.031  1.00 23.04      A    O
ATOM   429  N   ILE A 195     -48.717  51.917  55.743  1.00 27.85      A    N
ATOM   430  CA  ILE A 195     -49.983  52.049  56.445  1.00 25.06      A    C
ATOM   431  CB  ILE A 195     -49.833  53.024  57.601  1.00 18.80      A    C
ATOM   432  CG2 ILE A 195     -51.111  53.079  58.400  1.00 18.80      A    C
ATOM   433  CG1 ILE A 195     -48.650  52.600  58.465  1.00 18.80      A    C
ATOM   434  CD1 ILE A 195     -48.313  53.577  59.575  1.00 18.80      A    C
ATOM   435  C   ILE A 195     -51.051  52.576  55.515  1.00 24.03      A    C
ATOM   436  O   ILE A 195     -50.818  53.533  54.792  1.00 22.65      A    O
ATOM   437  N   TYR A 196     -52.229  51.970  55.543  1.00 13.66      A    N
ATOM   438  CA  TYR A 196     -53.320  52.400  54.667  1.00 18.19      A    C
ATOM   439  CB  TYR A 196     -53.410  51.497  53.424  1.00 20.55      A    C
ATOM   440  CG  TYR A 196     -53.586  50.029  53.756  1.00 15.44      A    C
ATOM   441  CD1 TYR A 196     -52.497  49.247  54.140  1.00 18.75      A    C
ATOM   442  CE1 TYR A 196     -52.662  47.918  54.498  1.00 17.11      A    C
ATOM   443  CD2 TYR A 196     -54.846  49.441  53.737  1.00 18.89      A    C
ATOM   444  CE2 TYR A 196     -55.025  48.110  54.095  1.00 22.06      A    C
ATOM   445  CZ  TYR A 196     -53.933  47.354  54.475  1.00 18.17      A    C
ATOM   446  OH  TYR A 196     -54.116  46.040  54.838  1.00 18.40      A    O
ATOM   447  C   TYR A 196     -54.658  52.374  55.385  1.00 19.44      A    C
ATOM   448  O   TYR A 196     -54.888  51.561  56.287  1.00 16.65      A    O
ATOM   449  N   GLY A 197     -55.546  53.263  54.961  1.00 24.36      A    N
ATOM   450  CA  GLY A 197     -56.857  53.345  55.571  1.00 23.18      A    C
ATOM   451  C   GLY A 197     -57.873  53.966  54.643  1.00 23.93      A    C
ATOM   452  O   GLY A 197     -57.598  54.963  53.969  1.00 22.27      A    O
ATOM   453  N   GLN A 198     -59.052  53.363  54.601  1.00 21.51      A    N
ATOM   454  CA  GLN A 198     -60.124  53.853  53.753  1.00 24.20      A    C
ATOM   455  CB  GLN A 198     -60.220  53.021  52.474  1.00 24.82      A    C
ATOM   456  CG  GLN A 198     -61.479  53.312  51.672  1.00 27.92      A    C
ATOM   457  CD  GLN A 198     -61.587  52.476  50.424  1.00 31.18      A    C
ATOM   458  OE1 GLN A 198     -60.738  52.563  49.542  1.00 29.84      A    O
ATOM   459  NE2 GLN A 198     -62.637  51.661  50.336  1.00 28.43      A    N
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Figure 8-8

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ATOM   460  C   GLN A 198     -61.458  53.801  54.469  1.00 24.15      A    C
ATOM   461  O   GLN A 198     -61.741  52.859  55.211  1.00 24.98      A    O
ATOM   462  N   VAL A 199     -62.275  54.821  54.255  1.00 10.19      A    N
ATOM   463  CA  VAL A 199     -63.605  54.847  54.851  1.00 13.34      A    C
ATOM   464  CB  VAL A 199     -63.635  55.606  56.226  1.00 23.00      A    C
ATOM   465  CG1 VAL A 199     -62.397  56.451  56.384  1.00 21.76      A    C
ATOM   466  CG2 VAL A 199     -64.899  56.455  56.339  1.00 24.47      A    C
ATOM   467  C   VAL A 199     -64.597  55.458  53.870  1.00 15.47      A    C
ATOM   468  O   VAL A 199     -64.274  56.393  53.133  1.00 14.19      A    O
ATOM   469  N   LEU A 200     -65.798  54.895  53.840  1.00 29.30      A    N
ATOM   470  CA  LEU A 200     -66.842  55.382  52.952  1.00 28.36      A    C
ATOM   471  CB  LEU A 200     -67.708  54.214  52.471  1.00 13.14      A    C
ATOM   472  CG  LEU A 200     -69.055  54.540  51.819  1.00 13.14      A    C
ATOM   473  CD1 LEU A 200     -68.915  55.680  50.804  1.00 13.14      A    C
ATOM   474  CD2 LEU A 200     -69.583  53.284  51.159  1.00 13.14      A    C
ATOM   475  C   LEU A 200     -67.705  56.422  53.658  1.00 29.34      A    C
ATOM   476  O   LEU A 200     -68.475  56.104  54.566  1.00 30.76      A    O
ATOM   477  N   TYR A 201     -67.561  57.671  53.240  1.00 24.46      A    N
ATOM   478  CA  TYR A 201     -68.323  58.748  53.829  1.00 24.72      A    C
ATOM   479  CB  TYR A 201     -67.569  60.059  53.661  1.00 38.86      A    C
ATOM   480  CG  TYR A 201     -66.289  60.025  54.431  1.00 38.86      A    C
ATOM   481  CD1 TYR A 201     -66.307  59.968  55.817  1.00 38.86      A    C
ATOM   482  CE1 TYR A 201     -65.140  59.833  56.541  1.00 38.86      A    C
ATOM   483  CD2 TYR A 201     -65.059  59.951  53.782  1.00 38.86      A    C
ATOM   484  CE2 TYR A 201     -63.879  59.811  54.499  1.00 38.86      A    C
ATOM   485  CZ  TYR A 201     -63.934  59.749  55.877  1.00 38.86      A    C
ATOM   486  OH  TYR A 201     -62.789  59.574  56.602  1.00 38.86      A    O
ATOM   487  C   TYR A 201     -69.709  58.830  53.215  1.00 24.16      A    C
ATOM   488  O   TYR A 201     -69.872  58.903  51.993  1.00 23.62      A    O
ATOM   489  N   THR A 202     -70.708  58.809  54.090  1.00 43.55      A    N
ATOM   490  CA  THR A 202     -72.091  58.865  53.677  1.00 48.80      A    C
ATOM   491  CB  THR A 202     -72.790  57.558  54.081  1.00 80.19      A    C
ATOM   492  OG1 THR A 202     -74.120  57.547  53.567  1.00 80.19      A    O
ATOM   493  CG2 THR A 202     -72.833  57.414  55.582  1.00 80.19      A    C
ATOM   494  C   THR A 202     -72.760  60.077  54.324  1.00 47.44      A    C
ATOM   495  O   THR A 202     -73.975  60.182  54.372  1.00 46.57      A    O
ATOM   496  N   ASP A 203     -71.936  60.995  54.810  1.00 49.70      A    N
ATOM   497  CA  ASP A 203     -72.391  62.216  55.467  1.00 49.70      A    C
ATOM   498  CB  ASP A 203     -71.383  62.587  56.571  1.00 53.41      A    C
ATOM   499  CG  ASP A 203     -71.749  63.857  57.315  1.00 53.41      A    C
ATOM   500  OD1 ASP A 203     -71.320  64.009  58.476  1.00 53.41      A    O
ATOM   501  OD2 ASP A 203     -72.452  64.712  56.742  1.00 53.41      A    O
ATOM   502  C   ASP A 203     -72.472  63.306  54.401  1.00 49.70      A    C
ATOM   503  O   ASP A 203     -71.719  63.266  53.434  1.00 49.70      A    O
ATOM   504  N   LYS A 204     -73.374  64.274  54.560  1.00 48.97      A    N
ATOM   505  CA  LYS A 204     -73.488  65.329  53.561  1.00 48.97      A    C
ATOM   506  CB  LYS A 204     -74.950  65.496  53.133  1.00 55.63      A    C
ATOM   507  CG  LYS A 204     -75.873  65.989  54.216  1.00 55.63      A    C
ATOM   508  CD  LYS A 204     -77.303  66.078  53.702  1.00 55.63      A    C
ATOM   509  CE  LYS A 204     -77.849  64.704  53.301  1.00 55.63      A    C
ATOM   510  NZ  LYS A 204     -79.256  64.765  52.815  1.00 55.63      A    N
ATOM   511  C   LYS A 204     -72.892  66.695  53.927  1.00 48.97      A    C
ATOM   512  O   LYS A 204     -73.254  67.712  53.330  1.00 48.97      A    O
ATOM   513  N   THR A 205     -71.974  66.725  54.890  1.00 49.78      A    N
ATOM   514  CA  THR A 205     -71.331  67.986  55.270  1.00 49.78      A    C
ATOM   515  CB  THR A 205     -70.525  67.837  56.586  1.00 53.87      A    C
ATOM   516  OG1 THR A 205     -69.364  67.033  56.356  1.00 53.87      A    O
ATOM   517  CG2 THR A 205     -71.367  67.171  57.649  1.00 53.87      A    C
ATOM   518  C   THR A 205     -70.381  68.380  54.127  1.00 49.78      A    C
ATOM   519  O   THR A 205     -69.893  67.505  53.416  1.00 49.78      A    O
ATOM   520  N   TYR A 206     -70.110  69.674  53.953  1.00 39.15      A    N
ATOM   521  CA  TYR A 206     -69.247  70.135  52.856  1.00 39.15      A    C
ATOM   522  CB  TYR A 206     -68.726  71.560  53.113  1.00 91.60      A    C
ATOM   523  CG  TYR A 206     -67.626  71.668  54.146  1.00 91.60      A    C
ATOM   524  CD1 TYR A 206     -66.491  72.443  53.905  1.00 91.60      A    C
ATOM   525  CE1 TYR A 206     -65.481  72.559  54.860  1.00 91.60      A    C
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Figure 8-9

ATOM	526	CD2	TYR	A	206	-67.725	71.011	55.370	1.00	91.60	A	C
ATOM	527	CE2	TYR	A	206	-66.723	71.120	56.333	1.00	91.60	A	C
ATOM	528	CZ	TYR	A	206	-65.605	71.893	56.075	1.00	91.60	A	C
ATOM	529	OH	TYR	A	206	-64.619	71.992	57.035	1.00	91.60	A	O
ATOM	530	C	TYR	A	206	-68.061	69.218	52.541	1.00	39.15	A	C
ATOM	531	O	TYR	A	206	-67.738	68.981	51.368	1.00	39.15	A	O
ATOM	532	N	ALA	A	207	-67.413	68.700	53.581	1.00	36.27	A	N
ATOM	533	CA	ALA	A	207	-66.272	67.822	53.373	1.00	36.27	A	C
ATOM	534	CB	ALA	A	207	-65.029	68.649	53.164	1.00	22.73	A	C
ATOM	535	C	ALA	A	207	-66.062	66.848	54.523	1.00	36.27	A	C
ATOM	536	O	ALA	A	207	-66.270	67.185	55.687	1.00	36.27	A	O
ATOM	537	N	MET	A	208	-65.653	65.631	54.182	1.00	42.10	A	N
ATOM	538	CA	MET	A	208	-65.395	64.597	55.172	1.00	42.10	A	C
ATOM	539	CB	MET	A	208	-66.438	63.487	55.059	1.00	40.63	A	C
ATOM	540	CG	MET	A	208	-67.844	63.900	55.484	1.00	40.63	A	C
ATOM	541	SD	MET	A	208	-67.923	64.364	57.214	1.00	40.63	A	S
ATOM	542	CE	MET	A	208	-68.053	62.743	57.992	1.00	40.63	A	C
ATOM	543	C	MET	A	208	-64.003	64.018	54.960	1.00	42.10	A	C
ATOM	544	O	MET	A	208	-63.370	64.268	53.931	1.00	42.10	A	O
ATOM	545	N	GLY	A	209	-63.519	63.245	55.929	1.00	20.42	A	N
ATOM	546	CA	GLY	A	209	-62.196	62.662	55.787	1.00	20.42	A	C
ATOM	547	C	GLY	A	209	-61.698	62.072	57.080	1.00	20.42	A	C
ATOM	548	O	GLY	A	209	-62.330	62.235	58.113	1.00	20.42	A	O
ATOM	549	N	HIS	A	210	-60.576	61.368	57.038	1.00	22.04	A	N
ATOM	550	CA	HIS	A	210	-60.053	60.771	58.258	1.00	22.04	A	C
ATOM	551	CB	HIS	A	210	-60.328	59.264	58.304	1.00	23.88	A	C
ATOM	552	CG	HIS	A	210	-59.860	58.523	57.091	1.00	23.88	A	C
ATOM	553	CD2	HIS	A	210	-58.947	57.532	56.949	1.00	23.88	A	C
ATOM	554	ND1	HIS	A	210	-60.404	58.722	55.840	1.00	23.88	A	N
ATOM	555	CE1	HIS	A	210	-59.853	57.883	54.982	1.00	23.88	A	C
ATOM	556	NE2	HIS	A	210	-58.967	57.149	55.630	1.00	23.88	A	N
ATOM	557	C	HIS	A	210	-58.577	61.003	58.423	1.00	22.04	A	C
ATOM	558	O	HIS	A	210	-57.879	61.414	57.488	1.00	22.04	A	O
ATOM	559	N	LEU	A	211	-58.112	60.733	59.635	1.00	24.91	A	N
ATOM	560	CA	LEU	A	211	-56.716	60.900	59.970	1.00	26.88	A	C
ATOM	561	CB	LEU	A	211	-56.577	61.858	61.145	1.00	12.14	A	C
ATOM	562	CG	LEU	A	211	-57.478	63.090	61.128	1.00	11.40	A	C
ATOM	563	CD1	LEU	A	211	-57.427	63.725	62.494	1.00	11.40	A	C
ATOM	564	CD2	LEU	A	211	-57.041	64.064	60.068	1.00	11.40	A	C
ATOM	565	C	LEU	A	211	-56.173	59.556	60.393	1.00	27.96	A	C
ATOM	566	O	LEU	A	211	-56.789	58.870	61.213	1.00	30.95	A	O
ATOM	567	N	ILE	A	212	-55.047	59.161	59.809	1.00	24.12	A	N
ATOM	568	CA	ILE	A	212	-54.400	57.931	60.219	1.00	21.83	A	C
ATOM	569	CB	ILE	A	212	-53.755	57.212	59.040	1.00	12.01	A	C
ATOM	570	CG2	ILE	A	212	-52.817	56.111	59.545	1.00	18.82	A	C
ATOM	571	CG1	ILE	A	212	-54.856	56.621	58.163	1.00	18.82	A	C
ATOM	572	CD1	ILE	A	212	-54.343	55.937	56.935	1.00	18.82	A	C
ATOM	573	C	ILE	A	212	-53.351	58.513	61.155	1.00	19.78	A	C
ATOM	574	O	ILE	A	212	-52.386	59.123	60.708	1.00	20.78	A	O
ATOM	575	N	GLN	A	213	-53.577	58.358	62.455	1.00	42.07	A	N
ATOM	576	CA	GLN	A	213	-52.687	58.915	63.454	1.00	43.25	A	C
ATOM	577	CB	GLN	A	213	-53.509	59.665	64.494	1.00	33.00	A	C
ATOM	578	CG	GLN	A	213	-54.516	60.615	63.910	1.00	39.43	A	C
ATOM	579	CD	GLN	A	213	-55.300	61.330	64.984	1.00	39.43	A	C
ATOM	580	OE1	GLN	A	213	-55.857	60.703	65.892	1.00	39.43	A	O
ATOM	581	NE2	GLN	A	213	-55.353	62.651	64.892	1.00	39.43	A	N
ATOM	582	C	GLN	A	213	-51.782	57.922	64.167	1.00	41.22	A	C
ATOM	583	O	GLN	A	213	-52.073	56.729	64.272	1.00	39.94	A	O
ATOM	584	N	ARG	A	214	-50.679	58.453	64.672	1.00	33.19	A	N
ATOM	585	CA	ARG	A	214	-49.696	57.678	65.404	1.00	33.76	A	C
ATOM	586	CB	ARG	A	214	-48.331	57.890	64.766	1.00	39.32	A	C
ATOM	587	CG	ARG	A	214	-47.211	57.250	65.521	1.00	31.30	A	C
ATOM	588	CD	ARG	A	214	-45.894	57.749	65.013	1.00	31.30	A	C
ATOM	589	NE	ARG	A	214	-44.778	57.062	65.650	1.00	31.30	A	N
ATOM	590	CZ	ARG	A	214	-43.541	57.543	65.690	1.00	31.30	A	C
ATOM	591	NH1	ARG	A	214	-43.274	58.720	65.125	1.00	31.30	A	N

Figure 8-10

ATOM	592	NH2	ARG	A	214	-42.578	56.857	66.298	1.00	31.30	A	N
ATOM	593	C	ARG	A	214	-49.659	58.126	66.877	1.00	32.41	A	C
ATOM	594	O	ARG	A	214	-49.444	59.301	67.169	1.00	33.43	A	O
ATOM	595	N	LYS	A	215	-49.883	57.193	67.796	1.00	19.13	A	N
ATOM	596	CA	LYS	A	215	-49.850	57.491	69.220	1.00	23.78	A	C
ATOM	597	CB	LYS	A	215	-50.921	56.680	69.942	1.00	154.94	A	C
ATOM	598	CG	LYS	A	215	-51.405	57.268	71.247	1.00	81.30	A	C
ATOM	599	CD	LYS	A	215	-52.372	56.301	71.918	1.00	81.30	A	C
ATOM	600	CE	LYS	A	215	-53.150	56.946	73.055	1.00	81.30	A	C
ATOM	601	NZ	LYS	A	215	-54.135	57.945	72.547	1.00	81.30	A	N
ATOM	602	C	LYS	A	215	-48.452	57.032	69.652	1.00	22.02	A	C
ATOM	603	O	LYS	A	215	-48.199	55.829	69.756	1.00	21.12	A	O
ATOM	604	N	LYS	A	216	-47.548	57.982	69.892	1.00	24.22	A	N
ATOM	605	CA	LYS	A	216	-46.169	57.670	70.265	1.00	24.22	A	C
ATOM	606	CB	LYS	A	216	-45.267	58.873	69.968	1.00	77.23	A	C
ATOM	607	CG	LYS	A	216	-45.198	59.244	68.502	1.00	60.90	A	C
ATOM	608	CD	LYS	A	216	-44.211	60.373	68.239	1.00	60.90	A	C
ATOM	609	CE	LYS	A	216	-44.700	61.697	68.790	1.00	60.90	A	C
ATOM	610	NZ	LYS	A	216	-43.804	62.834	68.404	1.00	60.90	A	N
ATOM	611	C	LYS	A	216	-45.972	57.258	71.714	1.00	24.22	A	C
ATOM	612	O	LYS	A	216	-46.632	57.780	72.595	1.00	24.22	A	O
ATOM	613	N	VAL	A	217	-45.057	56.323	71.956	1.00	47.82	A	N
ATOM	614	CA	VAL	A	217	-44.760	55.889	73.320	1.00	47.82	A	C
ATOM	615	CB	VAL	A	217	-44.174	54.468	73.383	1.00	47.76	A	C
ATOM	616	CG1	VAL	A	217	-45.249	53.470	73.126	1.00	47.76	A	C
ATOM	617	CG2	VAL	A	217	-43.049	54.314	72.376	1.00	47.76	A	C
ATOM	618	C	VAL	A	217	-43.727	56.812	73.917	1.00	47.82	A	C
ATOM	619	O	VAL	A	217	-43.676	56.998	75.130	1.00	47.82	A	O
ATOM	620	N	HIS	A	218	-42.887	57.372	73.057	1.00	63.41	A	N
ATOM	621	CA	HIS	A	218	-41.865	58.281	73.511	1.00	63.41	A	C
ATOM	622	CB	HIS	A	218	-40.513	57.911	72.944	1.00	44.54	A	C
ATOM	623	CG	HIS	A	218	-40.066	56.545	73.339	1.00	44.54	A	C
ATOM	624	CD2	HIS	A	218	-39.281	55.646	72.701	1.00	44.54	A	C
ATOM	625	ND1	HIS	A	218	-40.406	55.975	74.546	1.00	44.54	A	N
ATOM	626	CE1	HIS	A	218	-39.850	54.782	74.636	1.00	44.54	A	C
ATOM	627	NE2	HIS	A	218	-39.161	54.559	73.531	1.00	44.54	A	N
ATOM	628	C	HIS	A	218	-42.200	59.690	73.149	1.00	63.41	A	C
ATOM	629	O	HIS	A	218	-42.458	60.040	71.989	1.00	63.41	A	O
ATOM	630	N	VAL	A	219	-42.217	60.465	74.213	1.00	28.52	A	N
ATOM	631	CA	VAL	A	219	-42.506	61.858	74.177	1.00	28.52	A	C
ATOM	632	CB	VAL	A	219	-43.819	62.117	74.904	1.00	34.96	A	C
ATOM	633	CG1	VAL	A	219	-44.092	63.610	75.016	1.00	34.96	A	C
ATOM	634	CG2	VAL	A	219	-44.930	61.420	74.152	1.00	34.96	A	C
ATOM	635	C	VAL	A	219	-41.346	62.524	74.896	1.00	28.52	A	C
ATOM	636	O	VAL	A	219	-40.942	62.104	75.984	1.00	28.52	A	O
ATOM	637	N	PHE	A	220	-40.792	63.546	74.259	1.00	33.43	A	N
ATOM	638	CA	PHE	A	220	-39.694	64.296	74.822	1.00	33.43	A	C
ATOM	639	CB	PHE	A	220	-38.425	63.966	74.072	1.00	28.22	A	C
ATOM	640	CG	PHE	A	220	-38.049	62.517	74.136	1.00	28.22	A	C
ATOM	641	CD1	PHE	A	220	-38.298	61.673	73.065	1.00	28.22	A	C
ATOM	642	CD2	PHE	A	220	-37.414	61.995	75.269	1.00	28.22	A	C
ATOM	643	CE1	PHE	A	220	-37.916	60.329	73.113	1.00	28.22	A	C
ATOM	644	CE2	PHE	A	220	-37.029	60.646	75.326	1.00	28.22	A	C
ATOM	645	CZ	PHE	A	220	-37.283	59.817	74.244	1.00	28.22	A	C
ATOM	646	C	PHE	A	220	-40.030	65.771	74.687	1.00	33.43	A	C
ATOM	647	O	PHE	A	220	-40.407	66.221	73.610	1.00	33.43	A	O
ATOM	648	N	GLY	A	221	-39.921	66.504	75.793	1.00	42.98	A	N
ATOM	649	CA	GLY	A	221	-40.213	67.928	75.800	1.00	42.98	A	C
ATOM	650	C	GLY	A	221	-41.343	68.394	74.896	1.00	42.98	A	C
ATOM	651	O	GLY	A	221	-42.488	67.957	75.026	1.00	42.98	A	O
ATOM	652	N	ASP	A	222	-40.995	69.289	73.977	1.00	52.93	A	N
ATOM	653	CA	ASP	A	222	-41.900	69.898	72.995	1.00	52.93	A	C
ATOM	654	CB	ASP	A	222	-41.046	70.616	71.943	1.00	127.79	A	C
ATOM	655	CG	ASP	A	222	-41.552	72.002	71.621	1.00	127.79	A	C
ATOM	656	OD1	ASP	A	222	-41.026	72.617	70.667	1.00	127.79	A	O
ATOM	657	OD2	ASP	A	222	-42.466	72.480	72.326	1.00	127.79	A	O

Figure 8-11

ATOM	658	C	ASP	A	222	-42.939	69.018	72.254	1.00	52.93	A C
ATOM	659	O	ASP	A	222	-44.144	69.275	72.334	1.00	52.93	A O
ATOM	660	N	GLU	A	223	-42.467	67.999	71.529	1.00	44.50	A N
ATOM	661	CA	GLU	A	223	-43.325	67.125	70.714	1.00	44.50	A C
ATOM	662	CB	GLU	A	223	-42.521	65.939	70.172	1.00	46.91	A C
ATOM	663	CG	GLU	A	223	-42.204	64.861	71.179	1.00	46.91	A C
ATOM	664	CD	GLU	A	223	-41.218	63.836	70.638	1.00	46.91	A C
ATOM	665	OE1	GLU	A	223	-40.958	62.842	71.340	1.00	46.91	A O
ATOM	666	OE2	GLU	A	223	-40.689	64.019	69.519	1.00	46.91	A O
ATOM	667	C	GLU	A	223	-44.627	66.609	71.305	1.00	44.50	A C
ATOM	668	O	GLU	A	223	-44.744	66.382	72.510	1.00	44.50	A O
ATOM	669	N	LEU	A	224	-45.598	66.419	70.412	1.00	43.04	A N
ATOM	670	CA	LEU	A	224	-46.937	65.939	70.748	1.00	43.04	A C
ATOM	671	CB	LEU	A	224	-47.934	66.458	69.715	1.00	64.08	A C
ATOM	672	CG	LEU	A	224	-48.130	67.969	69.620	1.00	64.08	A C
ATOM	673	CD1	LEU	A	224	-48.885	68.287	68.340	1.00	64.08	A C
ATOM	674	CD2	LEU	A	224	-48.880	68.481	70.852	1.00	64.08	A C
ATOM	675	C	LEU	A	224	-46.962	64.418	70.741	1.00	43.04	A C
ATOM	676	O	LEU	A	224	-46.270	63.804	69.934	1.00	43.04	A O
ATOM	677	N	SER	A	225	-47.773	63.808	71.606	1.00	35.93	A N
ATOM	678	CA	SER	A	225	-47.817	62.349	71.656	1.00	35.93	A C
ATOM	679	CB	SER	A	225	-48.400	61.873	72.990	1.00	91.97	A C
ATOM	680	OG	SER	A	225	-49.703	62.383	73.191	1.00	91.97	A O
ATOM	681	C	SER	A	225	-48.602	61.744	70.490	1.00	35.93	A C
ATOM	682	O	SER	A	225	-48.286	60.648	70.029	1.00	35.93	A O
ATOM	683	N	LEU	A	226	-49.620	62.459	70.017	1.00	51.75	A N
ATOM	684	CA	LEU	A	226	-50.429	61.982	68.902	1.00	50.52	A C
ATOM	685	CB	LEU	A	226	-51.916	62.033	69.252	1.00	34.31	A C
ATOM	686	CG	LEU	A	226	-52.851	61.403	68.210	1.00	34.31	A C
ATOM	687	CD1	LEU	A	226	-52.675	59.882	68.205	1.00	34.31	A C
ATOM	688	CD2	LEU	A	226	-54.285	61.747	68.538	1.00	34.31	A C
ATOM	689	C	LEU	A	226	-50.193	62.839	67.671	1.00	45.99	A C
ATOM	690	O	LEU	A	226	-50.467	64.028	67.683	1.00	46.76	A O
ATOM	691	N	VAL	A	227	-49.682	62.241	66.607	1.00	51.92	A N
ATOM	692	CA	VAL	A	227	-49.440	62.983	65.376	1.00	46.92	A C
ATOM	693	CB	VAL	A	227	-47.947	63.091	65.074	1.00	34.29	A C
ATOM	694	CG1	VAL	A	227	-47.255	63.802	66.216	1.00	34.29	A C
ATOM	695	CG2	VAL	A	227	-47.351	61.709	64.864	1.00	34.29	A C
ATOM	696	C	VAL	A	227	-50.118	62.268	64.222	1.00	42.75	A C
ATOM	697	O	VAL	A	227	-50.171	61.033	64.189	1.00	33.66	A O
ATOM	698	N	THR	A	228	-50.642	63.024	63.268	1.00	16.17	A N
ATOM	699	CA	THR	A	228	-51.307	62.356	62.166	1.00	17.88	A C
ATOM	700	CB	THR	A	228	-52.572	63.141	61.664	1.00	23.26	A C
ATOM	701	OG1	THR	A	228	-52.259	63.841	60.459	1.00	23.26	A O
ATOM	702	CG2	THR	A	228	-53.070	64.127	62.720	1.00	23.26	A C
ATOM	703	C	THR	A	228	-50.311	62.133	61.041	1.00	16.17	A C
ATOM	704	O	THR	A	228	-49.625	63.053	60.612	1.00	18.19	A O
ATOM	705	N	LEU	A	229	-50.216	60.888	60.596	1.00	23.62	A N
ATOM	706	CA	LEU	A	229	-49.303	60.506	59.531	1.00	20.31	A C
ATOM	707	CB	LEU	A	229	-49.066	58.990	59.572	1.00	16.03	A C
ATOM	708	CG	LEU	A	229	-47.988	58.441	60.521	1.00	16.03	A C
ATOM	709	CD1	LEU	A	229	-47.629	59.462	61.560	1.00	16.03	A C
ATOM	710	CD2	LEU	A	229	-48.476	57.161	61.153	1.00	16.03	A C
ATOM	711	C	LEU	A	229	-49.839	60.911	58.171	1.00	20.20	A C
ATOM	712	O	LEU	A	229	-49.171	61.610	57.412	1.00	20.55	A O
ATOM	713	N	PHE	A	230	-51.045	60.461	57.859	1.00	33.69	A N
ATOM	714	CA	PHE	A	230	-51.663	60.791	56.583	1.00	33.43	A C
ATOM	715	CB	PHE	A	230	-51.551	59.623	55.601	1.00	53.44	A C
ATOM	716	CG	PHE	A	230	-50.316	58.820	55.773	1.00	53.44	A C
ATOM	717	CD1	PHE	A	230	-50.356	57.610	56.452	1.00	53.44	A C
ATOM	718	CD2	PHE	A	230	-49.092	59.306	55.320	1.00	53.44	A C
ATOM	719	CE1	PHE	A	230	-49.191	56.889	56.685	1.00	53.44	A C
ATOM	720	CE2	PHE	A	230	-47.919	58.598	55.546	1.00	53.44	A C
ATOM	721	CZ	PHE	A	230	-47.965	57.386	56.232	1.00	53.44	A C
ATOM	722	C	PHE	A	230	-53.125	61.078	56.812	1.00	35.32	A C
ATOM	723	O	PHE	A	230	-53.712	60.629	57.800	1.00	34.08	A O

Figure 8-12

ATOM	724	N	ARG	A	231	-53.716	61.839	55.902	1.00	17.06	A N
ATOM	725	CA	ARG	A	231	-55.131	62.139	56.008	1.00	18.90	A C
ATOM	726	CB	ARG	A	231	-55.385	63.464	56.740	1.00	23.86	A C
ATOM	727	CG	ARG	A	231	-54.869	64.711	56.061	1.00	23.86	A C
ATOM	728	CD	ARG	A	231	-54.857	65.851	57.071	1.00	27.90	A C
ATOM	729	NE	ARG	A	231	-54.638	67.149	56.446	1.00	35.24	A N
ATOM	730	CZ	ARG	A	231	-55.565	67.802	55.761	1.00	45.74	A C
ATOM	731	NH1	ARG	A	231	-56.770	67.272	55.623	1.00	41.97	A N
ATOM	732	NH2	ARG	A	231	-55.286	68.973	55.206	1.00	46.51	A N
ATOM	733	C	ARG	A	231	-55.777	62.125	54.635	1.00	21.04	A C
ATOM	734	O	ARG	A	231	-55.117	62.252	53.598	1.00	24.03	A O
ATOM	735	N	CYS	A	232	-57.085	61.936	54.662	1.00	17.76	A N
ATOM	736	CA	CYS	A	232	-57.895	61.831	53.472	1.00	17.70	A C
ATOM	737	C	CYS	A	232	-59.007	62.857	53.588	1.00	21.16	A C
ATOM	738	O	CYS	A	232	-59.567	63.052	54.666	1.00	22.59	A O
ATOM	739	CB	CYS	A	232	-58.500	60.434	53.432	1.00	51.90	A C
ATOM	740	SG	CYS	A	232	-58.652	59.731	51.779	1.00	51.90	A S
ATOM	741	N	ILE	A	233	-59.341	63.514	52.487	1.00	17.35	A N
ATOM	742	CA	ILE	A	233	-60.410	64.508	52.530	1.00	19.05	A C
ATOM	743	CB	ILE	A	233	-59.847	65.949	52.711	1.00	38.23	A C
ATOM	744	CG2	ILE	A	233	-58.986	66.339	51.522	1.00	38.23	A C
ATOM	745	CG1	ILE	A	233	-60.989	66.950	52.831	1.00	38.23	A C
ATOM	746	CD1	ILE	A	233	-61.877	66.705	53.997	1.00	38.23	A C
ATOM	747	C	ILE	A	233	-61.206	64.428	51.243	1.00	23.53	A C
ATOM	748	O	ILE	A	233	-60.645	64.320	50.153	1.00	23.99	A O
ATOM	749	N	GLN	A	234	-62.522	64.483	51.374	1.00	21.22	A N
ATOM	750	CA	GLN	A	234	-63.397	64.393	50.220	1.00	25.11	A C
ATOM	751	CB	GLN	A	234	-63.876	62.943	50.098	1.00	48.22	A C
ATOM	752	CG	GLN	A	234	-64.398	62.547	48.735	1.00	48.22	A C
ATOM	753	CD	GLN	A	234	-63.305	62.416	47.696	1.00	48.22	A C
ATOM	754	OE1	GLN	A	234	-63.574	62.413	46.495	1.00	48.22	A O
ATOM	755	NE2	GLN	A	234	-62.066	62.304	48.152	1.00	48.22	A N
ATOM	756	C	GLN	A	234	-64.589	65.358	50.354	1.00	26.06	A C
ATOM	757	O	GLN	A	234	-65.215	65.446	51.413	1.00	26.04	A O
ATOM	758	N	ASN	A	235	-64.887	66.107	49.299	1.00	30.72	A N
ATOM	759	CA	ASN	A	235	-66.033	67.012	49.342	1.00	34.16	A C
ATOM	760	CB	ASN	A	235	-66.007	68.003	48.172	1.00	31.14	A C
ATOM	761	CG	ASN	A	235	-65.066	69.173	48.404	1.00	31.14	A C
ATOM	762	OD1	ASN	A	235	-65.195	69.904	49.387	1.00	31.14	A O
ATOM	763	ND2	ASN	A	235	-64.123	69.367	47.489	1.00	31.14	A N
ATOM	764	C	ASN	A	235	-67.273	66.131	49.223	1.00	32.06	A C
ATOM	765	O	ASN	A	235	-67.265	65.138	48.489	1.00	29.37	A O
ATOM	766	N	MET	A	236	-68.334	66.484	49.943	1.00	41.64	A N
ATOM	767	CA	MET	A	236	-69.578	65.713	49.900	1.00	41.64	A C
ATOM	768	CB	MET	A	236	-70.001	65.321	51.313	1.00	41.32	A C
ATOM	769	CG	MET	A	236	-68.985	64.474	52.049	1.00	41.32	A C
ATOM	770	SD	MET	A	236	-68.726	62.868	51.262	1.00	41.32	A S
ATOM	771	CE	MET	A	236	-67.235	63.185	50.457	1.00	41.32	A C
ATOM	772	C	MET	A	236	-70.700	66.514	49.254	1.00	41.64	A C
ATOM	773	O	MET	A	236	-70.779	67.729	49.421	1.00	41.64	A O
ATOM	774	N	PRO	A	237	-71.582	65.845	48.497	1.00	28.15	A N
ATOM	775	CD	PRO	A	237	-71.499	64.435	48.085	1.00	24.92	A C
ATOM	776	CA	PRO	A	237	-72.709	66.503	47.829	1.00	28.15	A C
ATOM	777	CB	PRO	A	237	-73.040	65.538	46.707	1.00	24.92	A C
ATOM	778	CG	PRO	A	237	-72.830	64.234	47.364	1.00	24.92	A C
ATOM	779	C	PRO	A	237	-73.895	66.701	48.785	1.00	28.15	A C
ATOM	780	O	PRO	A	237	-73.902	66.182	49.907	1.00	28.15	A O
ATOM	781	N	GLU	A	238	-74.894	67.452	48.331	1.00	62.90	A N
ATOM	782	CA	GLU	A	238	-76.083	67.732	49.129	1.00	62.90	A C
ATOM	783	CB	GLU	A	238	-76.895	68.853	48.481	1.00	124.39	A C
ATOM	784	CG	GLU	A	238	-76.213	70.202	48.527	1.00	124.39	A C
ATOM	785	CD	GLU	A	238	-76.111	70.742	49.936	1.00	124.39	A C
ATOM	786	OE1	GLU	A	238	-75.604	70.017	50.819	1.00	124.39	A O
ATOM	787	OE2	GLU	A	238	-76.538	71.894	50.159	1.00	124.39	A O
ATOM	788	C	GLU	A	238	-76.960	66.502	49.293	1.00	62.90	A C
ATOM	789	O	GLU	A	238	-77.446	66.220	50.387	1.00	62.90	A O

Figure 8-13

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ATOM   790  N   THR A 239     -77.153  65.768  48.202  1.00 52.51      A    N
ATOM   791  CA  THR A 239     -77.986  64.571  48.226  1.00 52.51      A    C
ATOM   792  CB  THR A 239     -79.141  64.695  47.217  1.00 59.41      A    C
ATOM   793  OG1 THR A 239     -78.610  64.806  45.893  1.00 59.41      A    O
ATOM   794  CG2 THR A 239     -79.973  65.930  47.522  1.00 59.41      A    C
ATOM   795  C   THR A 239     -77.207  63.290  47.925  1.00 52.51      A    C
ATOM   796  O   THR A 239     -76.210  63.311  47.204  1.00 52.51      A    O
ATOM   797  N   LEU A 240     -77.678  62.177  48.487  1.00 27.52      A    N
ATOM   798  CA  LEU A 240     -77.050  60.872  48.298  1.00 27.52      A    C
ATOM   799  CB  LEU A 240     -77.364  60.323  46.904  1.00 44.77      A    C
ATOM   800  CG  LEU A 240     -78.803  59.935  46.587  1.00 44.77      A    C
ATOM   801  CD1 LEU A 240     -79.284  58.894  47.578  1.00 44.77      A    C
ATOM   802  CD2 LEU A 240     -79.673  61.168  46.638  1.00 44.77      A    C
ATOM   803  C   LEU A 240     -75.537  60.897  48.487  1.00 27.52      A    C
ATOM   804  O   LEU A 240     -74.789  60.348  47.675  1.00 27.52      A    O
ATOM   805  N   PRO A 241     -75.060  61.534  49.561  1.00 37.14      A    N
ATOM   806  CD  PRO A 241     -75.750  61.991  50.776  1.00 35.36      A    C
ATOM   807  CA  PRO A 241     -73.612  61.559  49.748  1.00 33.13      A    C
ATOM   808  CB  PRO A 241     -73.453  62.234  51.104  1.00 35.36      A    C
ATOM   809  CG  PRO A 241     -74.678  61.819  51.825  1.00 35.36      A    C
ATOM   810  C   PRO A 241     -73.089  60.130  49.735  1.00 30.72      A    C
ATOM   811  O   PRO A 241     -73.586  59.269  50.461  1.00 31.76      A    O
ATOM   812  N   ASN A 242     -72.087  59.878  48.902  1.00 28.29      A    N
ATOM   813  CA  ASN A 242     -71.539  58.541  48.797  1.00 25.06      A    C
ATOM   814  CB  ASN A 242     -72.459  57.717  47.894  1.00 36.31      A    C
ATOM   815  CG  ASN A 242     -72.681  56.322  48.411  1.00 36.31      A    C
ATOM   816  OD1 ASN A 242     -73.570  55.617  47.952  1.00 36.31      A    O
ATOM   817  ND2 ASN A 242     -71.869  55.909  49.365  1.00 36.31      A    N
ATOM   818  C   ASN A 242     -70.109  58.553  48.255  1.00 22.62      A    C
ATOM   819  O   ASN A 242     -69.881  58.234  47.095  1.00 22.75      A    O
ATOM   820  N   ASN A 243     -69.148  58.913  49.103  1.00 29.72      A    N
ATOM   821  CA  ASN A 243     -67.738  58.961  48.702  1.00 27.03      A    C
ATOM   822  CB  ASN A 243     -67.243  60.400  48.686  1.00 31.41      A    C
ATOM   823  CG  ASN A 243     -67.628  61.139  47.436  1.00 31.41      A    C
ATOM   824  OD1 ASN A 243     -67.920  62.335  47.489  1.00 31.41      A    O
ATOM   825  ND2 ASN A 243     -67.614  60.448  46.294  1.00 31.41      A    N
ATOM   826  C   ASN A 243     -66.784  58.163  49.584  1.00 24.16      A    C
ATOM   827  O   ASN A 243     -66.766  58.330  50.797  1.00 24.08      A    O
ATOM   828  N   SER A 244     -65.983  57.299  48.972  1.00 18.03      A    N
ATOM   829  CA  SER A 244     -64.992  56.532  49.726  1.00 18.03      A    C
ATOM   830  CB  SER A 244     -64.826  55.105  49.156  1.00 14.19      A    C
ATOM   831  OG  SER A 244     -64.351  55.086  47.814  1.00 14.19      A    O
ATOM   832  C   SER A 244     -63.675  57.310  49.613  1.00 21.77      A    C
ATOM   833  O   SER A 244     -63.454  58.015  48.644  1.00 27.09      A    O
ATOM   834  N   CYS A 245     -62.807  57.193  50.607  1.00 39.93      A    N
ATOM   835  CA  CYS A 245     -61.538  57.911  50.588  1.00 38.18      A    C
ATOM   836  C   CYS A 245     -60.422  56.976  51.047  1.00 38.74      A    C
ATOM   837  O   CYS A 245     -60.519  56.365  52.109  1.00 36.70      A    O
ATOM   838  CB  CYS A 245     -61.617  59.117  51.525  1.00 46.50      A    C
ATOM   839  SG  CYS A 245     -60.441  60.432  51.114  1.00 46.50      A    S
ATOM   840  N   TYR A 246     -59.365  56.864  50.248  1.00 25.62      A    N
ATOM   841  CA  TYR A 246     -58.246  55.988  50.586  1.00 22.34      A    C
ATOM   842  CB  TYR A 246     -58.154  54.823  49.578  1.00 26.30      A    C
ATOM   843  CG  TYR A 246     -56.892  53.971  49.677  1.00 26.30      A    C
ATOM   844  CD1 TYR A 246     -56.933  52.656  50.150  1.00 26.30      A    C
ATOM   845  CE1 TYR A 246     -55.768  51.867  50.210  1.00 26.30      A    C
ATOM   846  CD2 TYR A 246     -55.657  54.476  49.275  1.00 26.30      A    C
ATOM   847  CE2 TYR A 246     -54.498  53.704  49.333  1.00 26.30      A    C
ATOM   848  CZ  TYR A 246     -54.560  52.405  49.794  1.00 26.30      A    C
ATOM   849  OH  TYR A 246     -53.414  51.647  49.784  1.00 26.30      A    O
ATOM   850  C   TYR A 246     -56.935  56.756  50.599  1.00 21.07      A    C
ATOM   851  O   TYR A 246     -56.695  57.596  49.745  1.00 20.25      A    O
ATOM   852  N   SER A 247     -56.088  56.469  51.578  1.00 39.60      A    N
ATOM   853  CA  SER A 247     -54.789  57.113  51.648  1.00 38.30      A    C
ATOM   854  CB  SER A 247     -54.869  58.421  52.419  1.00 23.05      A    C
ATOM   855  OG  SER A 247     -53.639  59.118  52.325  1.00 23.05      A    O
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Figure 8-14

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ATOM   856  C   SER A 247     -53.820  56.159  52.326  1.00 37.52      A    C
ATOM   857  O   SER A 247     -54.211  55.389  53.208  1.00 34.95      A    O
ATOM   858  N   ALA A 248     -52.562  56.202  51.906  1.00 32.42      A    N
ATOM   859  CA  ALA A 248     -51.562  55.315  52.465  1.00 32.75      A    C
ATOM   860  CB  ALA A 248     -51.532  54.010  51.692  1.00 42.92      A    C
ATOM   861  C   ALA A 248     -50.206  55.959  52.417  1.00 31.46      A    C
ATOM   862  O   ALA A 248     -49.981  56.880  51.644  1.00 28.13      A    O
ATOM   863  N   GLY A 249     -49.293  55.462  53.236  1.00 32.27      A    N
ATOM   864  CA  GLY A 249     -47.964  56.024  53.252  1.00 24.49      A    C
ATOM   865  C   GLY A 249     -47.035  55.143  54.040  1.00 28.72      A    C
ATOM   866  O   GLY A 249     -47.474  54.151  54.613  1.00 26.54      A    O
ATOM   867  N   ILE A 250     -45.753  55.487  54.061  1.00 19.33      A    N
ATOM   868  CA  ILE A 250     -44.780  54.707  54.799  1.00 19.33      A    C
ATOM   869  CB  ILE A 250     -43.584  54.339  53.907  1.00  3.80      A    C
ATOM   870  CG2 ILE A 250     -42.557  53.541  54.706  1.00  3.80      A    C
ATOM   871  CG1 ILE A 250     -44.076  53.531  52.702  1.00  3.80      A    C
ATOM   872  CD1 ILE A 250     -42.967  53.016  51.801  1.00  3.80      A    C
ATOM   873  C   ILE A 250     -44.315  55.553  55.968  1.00 19.33      A    C
ATOM   874  O   ILE A 250     -44.194  56.769  55.858  1.00 19.33      A    O
ATOM   875  N   ALA A 251     -44.070  54.910  57.098  1.00 15.77      A    N
ATOM   876  CA  ALA A 251     -43.626  55.622  58.288  1.00 17.07      A    C
ATOM   877  CB  ALA A 251     -44.826  56.194  59.033  1.00  1.00      A    C
ATOM   878  C   ALA A 251     -42.854  54.683  59.192  1.00 20.28      A    C
ATOM   879  O   ALA A 251     -43.148  53.489  59.255  1.00 19.81      A    O
ATOM   880  N   LYS A 252     -41.852  55.213  59.879  1.00 18.06      A    N
ATOM   881  CA  LYS A 252     -41.080  54.386  60.781  1.00 18.21      A    C
ATOM   882  CB  LYS A 252     -39.631  54.861  60.847  1.00 60.73      A    C
ATOM   883  CG  LYS A 252     -38.748  53.994  61.718  1.00 61.21      A    C
ATOM   884  CD  LYS A 252     -37.286  54.239  61.403  1.00 61.21      A    C
ATOM   885  CE  LYS A 252     -36.365  53.429  62.301  1.00 61.21      A    C
ATOM   886  NZ  LYS A 252     -36.446  53.885  63.715  1.00 61.21      A    N
ATOM   887  C   LYS A 252     -41.737  54.473  62.152  1.00 18.83      A    C
ATOM   888  O   LYS A 252     -41.889  55.561  62.703  1.00 21.71      A    O
ATOM   889  N   LEU A 253     -42.161  53.325  62.674  1.00 30.73      A    N
ATOM   890  CA  LEU A 253     -42.804  53.248  63.980  1.00 30.46      A    C
ATOM   891  CB  LEU A 253     -44.114  52.475  63.878  1.00 31.33      A    C
ATOM   892  CG  LEU A 253     -45.361  53.099  63.249  1.00 32.87      A    C
ATOM   893  CD1 LEU A 253     -45.021  54.352  62.469  1.00 27.67      A    C
ATOM   894  CD2 LEU A 253     -46.029  52.052  62.367  1.00 29.17      A    C
ATOM   895  C   LEU A 253     -41.896  52.540  64.985  1.00 31.82      A    C
ATOM   896  O   LEU A 253     -41.090  51.683  64.610  1.00 29.40      A    O
ATOM   897  N   GLU A 254     -42.029  52.908  66.258  1.00 27.67      A    N
ATOM   898  CA  GLU A 254     -41.243  52.307  67.328  1.00 29.34      A    C
ATOM   899  CB  GLU A 254     -40.733  53.365  68.301  1.00101.70      A    C
ATOM   900  CG  GLU A 254     -39.623  54.225  67.788  1.00 70.99      A    C
ATOM   901  CD  GLU A 254     -39.003  55.024  68.905  1.00 70.99      A    C
ATOM   902  OE1 GLU A 254     -38.453  54.403  69.843  1.00 70.99      A    O
ATOM   903  OE2 GLU A 254     -39.072  56.271  68.854  1.00 70.99      A    O
ATOM   904  C   GLU A 254     -42.105  51.331  68.106  1.00 30.13      A    C
ATOM   905  O   GLU A 254     -43.312  51.529  68.253  1.00 29.85      A    O
ATOM   906  N   GLU A 255     -41.486  50.269  68.607  1.00 34.67      A    N
ATOM   907  CA  GLU A 255     -42.218  49.298  69.403  1.00 33.57      A    C
ATOM   908  CB  GLU A 255     -41.272  48.275  70.017  1.00 54.58      A    C
ATOM   909  CG  GLU A 255     -41.967  47.373  71.013  1.00 54.58      A    C
ATOM   910  CD  GLU A 255     -41.031  46.386  71.669  1.00 54.58      A    C
ATOM   911  OE1 GLU A 255     -41.509  45.612  72.527  1.00 54.58      A    O
ATOM   912  OE2 GLU A 255     -39.824  46.381  71.327  1.00 54.58      A    O
ATOM   913  C   GLU A 255     -42.938  50.048  70.519  1.00 36.02      A    C
ATOM   914  O   GLU A 255     -42.333  50.834  71.246  1.00 39.25      A    O
ATOM   915  N   GLY A 256     -44.235  49.801  70.646  1.00 15.06      A    N
ATOM   916  CA  GLY A 256     -45.016  50.462  71.670  1.00 15.06      A    C
ATOM   917  C   GLY A 256     -45.973  51.455  71.051  1.00 15.06      A    C
ATOM   918  O   GLY A 256     -47.000  51.784  71.649  1.00 15.06      A    O
ATOM   919  N   ASP A 257     -45.637  51.941  69.856  1.00 24.23      A    N
ATOM   920  CA  ASP A 257     -46.495  52.893  69.167  1.00 27.51      A    C
ATOM   921  CB  ASP A 257     -45.838  53.408  67.886  1.00 26.84      A    C
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Figure 8-15

ATOM	922	CG	ASP	A	257	-44.706	54.376	68.150	1.00	26.84	A C
ATOM	923	OD1	ASP	A	257	-44.663	54.974	69.254	1.00	26.84	A O
ATOM	924	OD2	ASP	A	257	-43.868	54.550	67.231	1.00	26.84	A O
ATOM	925	C	ASP	A	257	-47.826	52.262	68.792	1.00	27.30	A C
ATOM	926	O	ASP	A	257	-47.946	51.044	68.675	1.00	31.76	A O
ATOM	927	N	GLU	A	258	-48.826	53.111	68.601	1.00	33.33	A N
ATOM	928	CA	GLU	A	258	-50.143	52.657	68.203	1.00	29.99	A C
ATOM	929	CB	GLU	A	258	-51.136	52.802	69.362	1.00	43.67	A C
ATOM	930	CG	GLU	A	258	-50.989	51.768	70.465	1.00	43.67	A C
ATOM	931	CD	GLU	A	258	-52.000	51.973	71.590	1.00	43.67	A C
ATOM	932	OE1	GLU	A	258	-52.131	51.086	72.461	1.00	43.67	A O
ATOM	933	OE2	GLU	A	258	-52.668	53.028	71.613	1.00	43.67	A O
ATOM	934	C	GLU	A	258	-50.599	53.499	67.005	1.00	28.70	A C
ATOM	935	O	GLU	A	258	-50.224	54.670	66.872	1.00	28.70	A O
ATOM	936	N	LEU	A	259	-51.379	52.885	66.120	1.00	20.49	A N
ATOM	937	CA	LEU	A	259	-51.919	53.575	64.964	1.00	16.96	A C
ATOM	938	CB	LEU	A	259	-51.526	52.848	63.679	1.00	25.48	A C
ATOM	939	CG	LEU	A	259	-50.040	52.747	63.320	1.00	25.48	A C
ATOM	940	CD1	LEU	A	259	-49.887	51.817	62.131	1.00	25.48	A C
ATOM	941	CD2	LEU	A	259	-49.468	54.131	62.995	1.00	25.48	A C
ATOM	942	C	LEU	A	259	-53.426	53.522	65.144	1.00	14.30	A C
ATOM	943	O	LEU	A	259	-53.957	52.488	65.550	1.00	18.38	A O
ATOM	944	N	GLN	A	260	-54.115	54.625	64.869	1.00	24.43	A N
ATOM	945	CA	GLN	A	260	-55.569	54.666	64.994	1.00	23.19	A C
ATOM	946	CB	GLN	A	260	-55.971	55.331	66.306	1.00	27.44	A C
ATOM	947	CG	GLN	A	260	-55.833	56.844	66.281	1.00	27.44	A C
ATOM	948	CD	GLN	A	260	-56.076	57.495	67.635	1.00	27.44	A C
ATOM	949	OE1	GLN	A	260	-56.260	58.718	67.727	1.00	27.44	A O
ATOM	950	NE2	GLN	A	260	-56.063	56.685	68.700	1.00	27.44	A N
ATOM	951	C	GLN	A	260	-56.130	55.472	63.832	1.00	23.18	A C
ATOM	952	O	GLN	A	260	-55.459	56.369	63.318	1.00	20.71	A O
ATOM	953	N	LEU	A	261	-57.350	55.156	63.408	1.00	33.18	A N
ATOM	954	CA	LEU	A	261	-57.979	55.896	62.318	1.00	33.49	A C
ATOM	955	CB	LEU	A	261	-58.547	54.919	61.285	1.00	12.53	A C
ATOM	956	CG	LEU	A	261	-58.974	55.563	59.963	1.00	12.53	A C
ATOM	957	CD1	LEU	A	261	-59.012	54.504	58.887	1.00	12.53	A C
ATOM	958	CD2	LEU	A	261	-60.338	56.254	60.104	1.00	12.53	A C
ATOM	959	C	LEU	A	261	-59.082	56.777	62.916	1.00	37.16	A C
ATOM	960	O	LEU	A	261	-60.048	56.268	63.479	1.00	37.83	A O
ATOM	961	N	ALA	A	262	-58.945	58.096	62.795	1.00	40.47	A N
ATOM	962	CA	ALA	A	262	-59.930	59.014	63.375	1.00	42.87	A C
ATOM	963	CB	ALA	A	262	-59.269	59.854	64.455	1.00	13.15	A C
ATOM	964	C	ALA	A	262	-60.629	59.942	62.393	1.00	42.17	A C
ATOM	965	O	ALA	A	262	-59.997	60.494	61.492	1.00	42.20	A O
ATOM	966	N	ILE	A	263	-61.934	60.116	62.591	1.00	31.39	A N
ATOM	967	CA	ILE	A	263	-62.742	61.005	61.761	1.00	30.43	A C
ATOM	968	CB	ILE	A	263	-64.040	60.326	61.327	1.00	15.96	A C
ATOM	969	CG2	ILE	A	263	-64.877	61.297	60.511	1.00	15.96	A C
ATOM	970	CG1	ILE	A	263	-63.709	59.076	60.510	1.00	15.96	A C
ATOM	971	CD1	ILE	A	263	-64.902	58.157	60.236	1.00	15.96	A C
ATOM	972	C	ILE	A	263	-63.068	62.254	62.588	1.00	28.75	A C
ATOM	973	O	ILE	A	263	-63.769	62.181	63.590	1.00	28.50	A O
ATOM	974	N	PRO	A	264	-62.546	63.416	62.178	1.00	48.55	A N
ATOM	975	CD	PRO	A	264	-61.648	63.569	61.030	1.00	25.68	A C
ATOM	976	CA	PRO	A	264	-62.735	64.708	62.839	1.00	48.55	A C
ATOM	977	CB	PRO	A	264	-61.709	65.601	62.149	1.00	25.68	A C
ATOM	978	CG	PRO	A	264	-60.747	64.641	61.515	1.00	25.68	A C
ATOM	979	C	PRO	A	264	-64.139	65.260	62.681	1.00	48.55	A C
ATOM	980	O	PRO	A	264	-64.329	66.350	62.136	1.00	48.55	A O
ATOM	981	N	ARG	A	265	-65.122	64.521	63.172	1.00	36.27	A N
ATOM	982	CA	ARG	A	265	-66.509	64.943	63.058	1.00	36.27	A C
ATOM	983	CB	ARG	A	265	-67.008	64.580	61.661	1.00	83.76	A C
ATOM	984	CG	ARG	A	265	-68.466	64.844	61.413	1.00	83.76	A C
ATOM	985	CD	ARG	A	265	-68.716	66.294	61.129	1.00	83.76	A C
ATOM	986	NE	ARG	A	265	-70.137	66.540	60.930	1.00	83.76	A N
ATOM	987	CZ	ARG	A	265	-70.647	67.727	60.629	1.00	83.76	A C

Figure 8-16

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ATOM   988  NH1 ARG A 265     -69.848  68.779  60.489  1.00 83.76      A    N
ATOM   989  NH2 ARG A 265     -71.958  67.862  60.475  1.00 83.76      A    N
ATOM   990  C   ARG A 265     -67.337  64.228  64.128  1.00 36.27      A    C
ATOM   991  O   ARG A 265     -67.097  63.053  64.421  1.00 36.27      A    O
ATOM   992  N   GLU A 266     -68.293  64.925  64.736  1.00 37.40      A    N
ATOM   993  CA  GLU A 266     -69.136  64.283  65.744  1.00 37.40      A    C
ATOM   994  CB  GLU A 266     -69.786  65.323  66.654  1.00113.98      A    C
ATOM   995  CG  GLU A 266     -68.827  65.887  67.684  1.00113.98      A    C
ATOM   996  CD  GLU A 266     -69.491  66.857  68.634  1.00113.98      A    C
ATOM   997  OE1 GLU A 266     -70.529  66.496  69.229  1.00113.98      A    O
ATOM   998  OE2 GLU A 266     -68.970  67.980  68.790  1.00113.98      A    O
ATOM   999  C   GLU A 266     -70.192  63.473  65.001  1.00 37.40      A    C
ATOM  1000  O   GLU A 266     -70.912  64.001  64.152  1.00 37.40      A    O
ATOM  1001  N   ASN A 267     -70.260  62.183  65.308  1.00 48.86      A    N
ATOM  1002  CA  ASN A 267     -71.197  61.294  64.640  1.00 48.86      A    C
ATOM  1003  CB  ASN A 267     -72.632  61.657  65.015  1.00 66.88      A    C
ATOM  1004  CG  ASN A 267     -72.878  61.533  66.504  1.00 66.88      A    C
ATOM  1005  OD1 ASN A 267     -72.486  62.398  67.283  1.00 66.88      A    O
ATOM  1006  ND2 ASN A 267     -73.504  60.437  66.910  1.00 66.88      A    N
ATOM  1007  C   ASN A 267     -70.968  61.411  63.143  1.00 48.86      A    C
ATOM  1008  O   ASN A 267     -71.805  61.915  62.403  1.00 48.86      A    O
ATOM  1009  N   ALA A 268     -69.806  60.927  62.722  1.00 65.74      A    N
ATOM  1010  CA  ALA A 268     -69.374  60.962  61.336  1.00 65.74      A    C
ATOM  1011  CB  ALA A 268     -68.239  59.978  61.130  1.00167.67      A    C
ATOM  1012  C   ALA A 268     -70.436  60.722  60.281  1.00 65.74      A    C
ATOM  1013  O   ALA A 268     -70.705  61.607  59.466  1.00 65.74      A    O
ATOM  1014  N   GLN A 269     -71.032  59.531  60.293  1.00 33.76      A    N
ATOM  1015  CA  GLN A 269     -72.030  59.141  59.286  1.00 31.69      A    C
ATOM  1016  CB  GLN A 269     -72.744  60.367  58.713  1.00 69.13      A    C
ATOM  1017  CG  GLN A 269     -74.165  60.118  58.305  1.00 61.78      A    C
ATOM  1018  CD  GLN A 269     -74.984  59.583  59.455  1.00 61.78      A    C
ATOM  1019  OE1 GLN A 269     -74.812  60.007  60.597  1.00 61.78      A    O
ATOM  1020  NE2 GLN A 269     -75.886  58.651  59.162  1.00 61.78      A    N
ATOM  1021  C   GLN A 269     -71.231  58.447  58.171  1.00 32.38      A    C
ATOM  1022  O   GLN A 269     -71.100  58.965  57.058  1.00 30.97      A    O
ATOM  1023  N   ILE A 270     -70.688  57.276  58.493  1.00 40.21      A    N
ATOM  1024  CA  ILE A 270     -69.868  56.522  57.561  1.00 38.42      A    C
ATOM  1025  CB  ILE A 270     -68.524  56.236  58.195  1.00 17.05      A    C
ATOM  1026  CG2 ILE A 270     -67.856  57.551  58.549  1.00 20.61      A    C
ATOM  1027  CG1 ILE A 270     -68.715  55.411  59.469  1.00 20.61      A    C
ATOM  1028  CD1 ILE A 270     -67.408  54.947  60.098  1.00 17.05      A    C
ATOM  1029  C   ILE A 270     -70.528  55.225  57.110  1.00 38.06      A    C
ATOM  1030  O   ILE A 270     -71.731  55.072  57.266  1.00 36.04      A    O
ATOM  1031  N   SER A 271     -69.763  54.276  56.579  1.00 65.79      A    N
ATOM  1032  CA  SER A 271     -70.395  53.063  56.085  1.00 66.45      A    C
ATOM  1033  CB  SER A 271     -69.908  52.753  54.678  1.00 54.13      A    C
ATOM  1034  OG  SER A 271     -70.721  51.744  54.100  1.00 48.89      A    O
ATOM  1035  C   SER A 271     -70.349  51.785  56.899  1.00 63.76      A    C
ATOM  1036  O   SER A 271     -71.299  51.003  56.857  1.00 65.12      A    O
ATOM  1037  N   LEU A 272     -69.267  51.537  57.620  1.00 26.57      A    N
ATOM  1038  CA  LEU A 272     -69.199  50.310  58.424  1.00 25.07      A    C
ATOM  1039  CB  LEU A 272     -70.320  50.268  59.480  1.00 20.54      A    C
ATOM  1040  CG  LEU A 272     -70.148  51.114  60.738  1.00 29.69      A    C
ATOM  1041  CD1 LEU A 272     -68.972  50.600  61.521  1.00 29.69      A    C
ATOM  1042  CD2 LEU A 272     -69.936  52.567  60.376  1.00 29.69      A    C
ATOM  1043  C   LEU A 272     -69.256  49.025  57.602  1.00 31.43      A    C
ATOM  1044  O   LEU A 272     -69.323  47.928  58.156  1.00 29.83      A    O
ATOM  1045  N   ASP A 273     -69.246  49.163  56.285  1.00 29.93      A    N
ATOM  1046  CA  ASP A 273     -69.254  48.010  55.389  1.00 25.10      A    C
ATOM  1047  CB  ASP A 273     -69.742  48.449  54.007  1.00 76.29      A    C
ATOM  1048  CG  ASP A 273     -70.758  47.505  53.424  1.00 76.29      A    C
ATOM  1049  OD1 ASP A 273     -71.744  47.205  54.123  1.00 76.29      A    O
ATOM  1050  OD2 ASP A 273     -70.574  47.086  52.264  1.00 76.29      A    O
ATOM  1051  C   ASP A 273     -67.798  47.498  55.329  1.00 26.76      A    C
ATOM  1052  O   ASP A 273     -66.911  48.186  54.804  1.00 30.09      A    O
ATOM  1053  N   GLY A 274     -67.557  46.308  55.878  1.00 35.39      A    N
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Figure 8-17

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ATOM 1054  CA  GLY A 274     -66.209  45.755  55.914  1.00 35.39      A    C
ATOM 1055  C   GLY A 274     -65.317  45.792  54.680  1.00 35.39      A    C
ATOM 1056  O   GLY A 274     -64.089  45.711  54.784  1.00 35.39      A    O
ATOM 1057  N   ASP A 275     -65.929  45.924  53.510  1.00 26.31      A    N
ATOM 1058  CA  ASP A 275     -65.200  45.965  52.246  1.00 26.31      A    C
ATOM 1059  CB  ASP A 275     -65.933  45.133  51.198  1.00 41.03      A    C
ATOM 1060  CG  ASP A 275     -67.265  45.741  50.800  1.00 41.03      A    C
ATOM 1061  OD1 ASP A 275     -67.655  46.758  51.402  1.00 41.03      A    O
ATOM 1062  OD2 ASP A 275     -67.922  45.207  49.887  1.00 41.03      A    O
ATOM 1063  C   ASP A 275     -65.011  47.376  51.680  1.00 26.31      A    C
ATOM 1064  O   ASP A 275     -64.562  47.546  50.543  1.00 26.31      A    O
ATOM 1065  N   VAL A 276     -65.374  48.390  52.448  1.00 26.43      A    N
ATOM 1066  CA  VAL A 276     -65.209  49.734  51.957  1.00 25.54      A    C
ATOM 1067  CB  VAL A 276     -66.563  50.334  51.484  1.00 11.27      A    C
ATOM 1068  CG1 VAL A 276     -67.453  50.678  52.663  1.00 11.27      A    C
ATOM 1069  CG2 VAL A 276     -66.307  51.562  50.621  1.00 11.27      A    C
ATOM 1070  C   VAL A 276     -64.575  50.597  53.035  1.00 23.65      A    C
ATOM 1071  O   VAL A 276     -64.008  51.653  52.736  1.00 24.04      A    O
ATOM 1072  N   THR A 277     -64.662  50.149  54.286  1.00 24.48      A    N
ATOM 1073  CA  THR A 277     -64.050  50.881  55.401  1.00 24.57      A    C
ATOM 1074  CB  THR A 277     -65.110  51.407  56.383  1.00 26.96      A    C
ATOM 1075  OG1 THR A 277     -65.940  52.365  55.711  1.00 27.69      A    O
ATOM 1076  CG2 THR A 277     -64.447  52.055  57.600  1.00 28.39      A    C
ATOM 1077  C   THR A 277     -63.104  49.927  56.129  1.00 22.84      A    C
ATOM 1078  O   THR A 277     -63.542  49.082  56.917  1.00 25.02      A    O
ATOM 1079  N   PHE A 278     -61.810  50.050  55.840  1.00 30.12      A    N
ATOM 1080  CA  PHE A 278     -60.790  49.193  56.443  1.00 24.29      A    C
ATOM 1081  CB  PHE A 278     -60.436  48.048  55.500  1.00 21.09      A    C
ATOM 1082  CG  PHE A 278     -60.224  48.481  54.090  1.00 21.09      A    C
ATOM 1083  CD1 PHE A 278     -58.953  48.791  53.625  1.00 21.09      A    C
ATOM 1084  CD2 PHE A 278     -61.307  48.591  53.217  1.00 21.09      A    C
ATOM 1085  CE1 PHE A 278     -58.763  49.210  52.302  1.00 21.09      A    C
ATOM 1086  CE2 PHE A 278     -61.127  49.007  51.902  1.00 21.09      A    C
ATOM 1087  CZ  PHE A 278     -59.853  49.317  51.442  1.00 21.09      A    C
ATOM 1088  C   PHE A 278     -59.538  49.968  56.812  1.00 26.75      A    C
ATOM 1089  O   PHE A 278     -59.319  51.078  56.348  1.00 31.91      A    O
ATOM 1090  N   PHE A 279     -58.713  49.355  57.643  1.00 35.32      A    N
ATOM 1091  CA  PHE A 279     -57.501  49.982  58.141  1.00 34.72      A    C
ATOM 1092  CB  PHE A 279     -57.834  50.557  59.517  1.00 23.76      A    C
ATOM 1093  CG  PHE A 279     -56.722  51.283  60.169  1.00 20.83      A    C
ATOM 1094  CD1 PHE A 279     -55.833  52.039  59.429  1.00 23.31      A    C
ATOM 1095  CD2 PHE A 279     -56.605  51.268  61.547  1.00 18.23      A    C
ATOM 1096  CE1 PHE A 279     -54.839  52.777  60.063  1.00 23.60      A    C
ATOM 1097  CE2 PHE A 279     -55.613  52.003  62.188  1.00 18.97      A    C
ATOM 1098  CZ  PHE A 279     -54.730  52.758  61.450  1.00 21.38      A    C
ATOM 1099  C   PHE A 279     -56.440  48.888  58.224  1.00 38.70      A    C
ATOM 1100  O   PHE A 279     -56.730  47.776  58.668  1.00 36.21      A    O
ATOM 1101  N   GLY A 280     -55.217  49.178  57.793  1.00 22.03      A    N
ATOM 1102  CA  GLY A 280     -54.195  48.143  57.833  1.00 22.72      A    C
ATOM 1103  C   GLY A 280     -52.753  48.613  57.817  1.00 22.60      A    C
ATOM 1104  O   GLY A 280     -52.456  49.763  57.472  1.00 22.27      A    O
ATOM 1105  N   ALA A 281     -51.848  47.713  58.193  1.00 20.07      A    N
ATOM 1106  CA  ALA A 281     -50.422  48.027  58.228  1.00 20.07      A    C
ATOM 1107  CB  ALA A 281     -49.993  48.422  59.637  1.00 19.34      A    C
ATOM 1108  C   ALA A 281     -49.630  46.825  57.770  1.00 20.07      A    C
ATOM 1109  O   ALA A 281     -49.928  45.687  58.151  1.00 20.07      A    O
ATOM 1110  N   LEU A 282     -48.618  47.085  56.951  1.00 35.65      A    N
ATOM 1111  CA  LEU A 282     -47.768  46.036  56.408  1.00 33.54      A    C
ATOM 1112  CB  LEU A 282     -47.929  45.977  54.886  1.00 24.27      A    C
ATOM 1113  CG  LEU A 282     -47.339  44.799  54.110  1.00 28.27      A    C
ATOM 1114  CD1 LEU A 282     -47.560  45.047  52.645  1.00 24.70      A    C
ATOM 1115  CD2 LEU A 282     -45.865  44.644  54.383  1.00 30.17      A    C
ATOM 1116  C   LEU A 282     -46.342  46.402  56.751  1.00 34.41      A    C
ATOM 1117  O   LEU A 282     -45.915  47.526  56.481  1.00 33.74      A    O
ATOM 1118  N   LYS A 283     -45.595  45.469  57.334  1.00 20.65      A    N
ATOM 1119  CA  LYS A 283     -44.213  45.778  57.680  1.00 22.16      A    C
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Figure 8-18

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ATOM 1120  CB  LYS A 283     -43.721  44.942  58.854  1.00 39.20      A    C
ATOM 1121  CG  LYS A 283     -42.334  45.362  59.282  1.00 42.87      A    C
ATOM 1122  CD  LYS A 283     -41.837  44.598  60.474  1.00 37.72      A    C
ATOM 1123  CE  LYS A 283     -40.500  45.150  60.925  1.00 37.12      A    C
ATOM 1124  NZ  LYS A 283     -39.971  44.391  62.090  1.00 39.04      A    N
ATOM 1125  C   LYS A 283     -43.271  45.573  56.512  1.00 25.19      A    C
ATOM 1126  O   LYS A 283     -43.171  44.481  55.973  1.00 24.26      A    O
ATOM 1127  N   LEU A 284     -42.582  46.640  56.123  1.00 25.28      A    N
ATOM 1128  CA  LEU A 284     -41.622  46.580  55.027  1.00 28.63      A    C
ATOM 1129  CB  LEU A 284     -41.189  47.986  54.632  1.00 21.43      A    C
ATOM 1130  CG  LEU A 284     -42.363  48.806  54.094  1.00 18.72      A    C
ATOM 1131  CD1 LEU A 284     -41.902  50.199  53.700  1.00 17.64      A    C
ATOM 1132  CD2 LEU A 284     -42.937  48.080  52.893  1.00 20.10      A    C
ATOM 1133  C   LEU A 284     -40.419  45.773  55.461  1.00 31.30      A    C
ATOM 1134  O   LEU A 284     -39.889  45.970  56.553  1.00 33.09      A    O
ATOM 1135  N   LEU A 285     -39.997  44.856  54.601  1.00 43.85      A    N
ATOM 1136  CA  LEU A 285     -38.859  43.999  54.897  1.00 43.85      A    C
ATOM 1137  CB  LEU A 285     -38.687  42.962  53.800  1.00 52.46      A    C
ATOM 1138  CG  LEU A 285     -38.053  41.667  54.290  1.00 52.46      A    C
ATOM 1139  CD1 LEU A 285     -39.046  40.937  55.179  1.00 52.46      A    C
ATOM 1140  CD2 LEU A 285     -37.674  40.798  53.105  1.00 52.46      A    C
ATOM 1141  C   LEU A 285     -37.596  44.837  55.011  1.00 43.85      A    C
ATOM 1142  O   LEU A 285     -36.750  44.543  55.880  1.00 45.31      A    O
ATOM 1143  OXT LEU A 285     -37.467  45.778  54.212  1.00 38.32      A    O
ATOM 1144  CB  VAL B 142     -35.757  35.602  47.371  1.00 49.08      B    C
ATOM 1145  CG1 VAL B 142     -35.492  34.699  48.563  1.00 49.08      B    C
ATOM 1146  CG2 VAL B 142     -35.349  34.905  46.067  1.00 49.08      B    C
ATOM 1147  C   VAL B 142     -37.416  37.091  46.294  1.00 71.08      B    C
ATOM 1148  O   VAL B 142     -36.762  38.123  46.394  1.00 71.08      B    O
ATOM 1149  N   VAL B 142     -38.102  34.797  47.007  1.00 71.08      B    N
ATOM 1150  CA  VAL B 142     -37.253  35.983  47.323  1.00 71.08      B    C
ATOM 1151  N   THR B 143     -38.287  36.882  45.311  1.00 87.68      B    N
ATOM 1152  CA  THR B 143     -38.489  37.875  44.263  1.00 87.68      B    C
ATOM 1153  CB  THR B 143     -38.383  37.242  42.877  1.00102.21      B    C
ATOM 1154  OG1 THR B 143     -39.257  36.114  42.810  1.00102.21      B    O
ATOM 1155  CG2 THR B 143     -36.961  36.801  42.600  1.00102.21      B    C
ATOM 1156  C   THR B 143     -39.799  38.650  44.317  1.00 87.68      B    C
ATOM 1157  O   THR B 143     -39.967  39.619  43.579  1.00 87.68      B    O
ATOM 1158  N   GLN B 144     -40.734  38.227  45.161  1.00 48.48      B    N
ATOM 1159  CA  GLN B 144     -42.009  38.945  45.286  1.00 39.10      B    C
ATOM 1160  CB  GLN B 144     -41.754  40.328  45.917  1.00 72.64      B    C
ATOM 1161  CG  GLN B 144     -42.897  40.877  46.761  1.00 72.64      B    C
ATOM 1162  CD  GLN B 144     -42.530  42.151  47.518  1.00 72.64      B    C
ATOM 1163  OE1 GLN B 144     -43.267  42.599  48.400  1.00 19.85      B    O
ATOM 1164  NE2 GLN B 144     -41.395  42.744  47.169  1.00 19.85      B    N
ATOM 1165  C   GLN B 144     -42.726  39.112  43.933  1.00 36.29      B    C
ATOM 1166  O   GLN B 144     -42.630  40.160  43.299  1.00 31.37      B    O
ATOM 1167  N   ASP B 145     -43.448  38.082  43.497  1.00 35.35      B    N
ATOM 1168  CA  ASP B 145     -44.165  38.144  42.221  1.00 35.06      B    C
ATOM 1169  CB  ASP B 145     -44.838  36.804  41.889  1.00 26.66      B    C
ATOM 1170  CG  ASP B 145     -43.895  35.634  41.965  1.00 44.57      B    C
ATOM 1171  OD1 ASP B 145     -42.755  35.760  41.478  1.00 44.57      B    O
ATOM 1172  OD2 ASP B 145     -44.303  34.581  42.499  1.00 44.57      B    O
ATOM 1173  C   ASP B 145     -45.257  39.211  42.208  1.00 33.10      B    C
ATOM 1174  O   ASP B 145     -45.759  39.620  43.255  1.00 32.07      B    O
ATOM 1175  N   CYS B 146     -45.635  39.641  41.010  1.00 22.99      B    N
ATOM 1176  CA  CYS B 146     -46.693  40.633  40.833  1.00 22.56      B    C
ATOM 1177  CB  CYS B 146     -46.238  42.015  41.310  1.00 38.64      B    C
ATOM 1178  SG  CYS B 146     -44.770  42.626  40.490  1.00 49.96      B    S
ATOM 1179  C   CYS B 146     -47.123  40.721  39.371  1.00 23.93      B    C
ATOM 1180  O   CYS B 146     -46.330  40.512  38.457  1.00 21.85      B    O
ATOM 1181  N   LEU B 147     -48.391  41.027  39.151  1.00 24.70      B    N
ATOM 1182  CA  LEU B 147     -48.910  41.144  37.804  1.00 24.70      B    C
ATOM 1183  CB  LEU B 147     -49.687  39.890  37.448  1.00 22.55      B    C
ATOM 1184  CG  LEU B 147     -50.410  39.903  36.103  1.00 22.55      B    C
ATOM 1185  CD1 LEU B 147     -50.612  38.468  35.663  1.00 27.08      B    C
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Figure 8-19

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ATOM 1186  CD2 LEU B 147     -51.741  40.650  36.206  1.00 27.08      B    C
ATOM 1187  C   LEU B 147     -49.812  42.365  37.734  1.00 24.70      B    C
ATOM 1188  O   LEU B 147     -50.566  42.638  38.664  1.00 25.86      B    O
ATOM 1189  N   GLN B 148     -49.745  43.095  36.629  1.00 40.96      B    N
ATOM 1190  CA  GLN B 148     -50.548  44.297  36.488  1.00 40.98      B    C
ATOM 1191  CB  GLN B 148     -49.651  45.513  36.676  1.00 18.87      B    C
ATOM 1192  CG  GLN B 148     -50.351  46.860  36.637  1.00 26.33      B    C
ATOM 1193  CD  GLN B 148     -49.418  47.999  37.050  1.00 26.33      B    C
ATOM 1194  OE1 GLN B 148     -49.361  48.389  38.222  1.00 26.33      B    O
ATOM 1195  NE2 GLN B 148     -48.663  48.519  36.087  1.00 26.33      B    N
ATOM 1196  C   GLN B 148     -51.260  44.377  35.147  1.00 42.10      B    C
ATOM 1197  O   GLN B 148     -50.687  44.075  34.107  1.00 42.61      B    O
ATOM 1198  N   LEU B 149     -52.519  44.787  35.188  1.00 35.19      B    N
ATOM 1199  CA  LEU B 149     -53.334  44.927  33.998  1.00 33.92      B    C
ATOM 1200  CB  LEU B 149     -54.633  44.137  34.170  1.00 24.71      B    C
ATOM 1201  CG  LEU B 149     -54.735  42.654  33.803  1.00 24.71      B    C
ATOM 1202  CD1 LEU B 149     -53.369  42.042  33.600  1.00 24.71      B    C
ATOM 1203  CD2 LEU B 149     -55.500  41.926  34.896  1.00 12.01      B    C
ATOM 1204  C   LEU B 149     -53.666  46.405  33.787  1.00 35.57      B    C
ATOM 1205  O   LEU B 149     -53.813  47.159  34.747  1.00 35.96      B    O
ATOM 1206  N   ILE B 150     -53.775  46.822  32.530  1.00 14.22      B    N
ATOM 1207  CA  ILE B 150     -54.134  48.208  32.211  1.00 13.09      B    C
ATOM 1208  CB  ILE B 150     -52.937  49.004  31.671  1.00 14.59      B    C
ATOM 1209  CG2 ILE B 150     -51.810  48.976  32.694  1.00 14.59      B    C
ATOM 1210  CG1 ILE B 150     -52.478  48.411  30.347  1.00 18.71      B    C
ATOM 1211  CD1 ILE B 150     -51.239  49.024  29.813  1.00 18.71      B    C
ATOM 1212  C   ILE B 150     -55.245  48.195  31.168  1.00 17.19      B    C
ATOM 1213  O   ILE B 150     -55.300  47.313  30.319  1.00 18.24      B    O
ATOM 1214  N   ALA B 151     -56.140  49.165  31.255  1.00 35.70      B    N
ATOM 1215  CA  ALA B 151     -57.262  49.237  30.336  1.00 35.70      B    C
ATOM 1216  CB  ALA B 151     -58.069  50.497  30.603  1.00  2.44      B    C
ATOM 1217  C   ALA B 151     -56.848  49.179  28.871  1.00 35.70      B    C
ATOM 1218  O   ALA B 151     -55.824  49.737  28.473  1.00 35.70      B    O
ATOM 1219  N   ASP B 152     -57.657  48.486  28.074  1.00 36.73      B    N
ATOM 1220  CA  ASP B 152     -57.415  48.346  26.645  1.00 36.73      B    C
ATOM 1221  CB  ASP B 152     -57.753  46.927  26.189  1.00 47.68      B    C
ATOM 1222  CG  ASP B 152     -57.572  46.737  24.693  1.00 47.68      B    C
ATOM 1223  OD1 ASP B 152     -57.959  45.672  24.182  1.00 47.68      B    O
ATOM 1224  OD2 ASP B 152     -57.040  47.648  24.027  1.00 47.68      B    O
ATOM 1225  C   ASP B 152     -58.303  49.344  25.911  1.00 36.73      B    C
ATOM 1226  O   ASP B 152     -59.488  49.090  25.697  1.00 36.73      B    O
ATOM 1227  N   SER B 153     -57.727  50.477  25.525  1.00 44.17      B    N
ATOM 1228  CA  SER B 153     -58.476  51.520  24.831  1.00 44.17      B    C
ATOM 1229  CB  SER B 153     -57.638  52.791  24.759  1.00 62.60      B    C
ATOM 1230  OG  SER B 153     -56.379  52.517  24.175  1.00 62.60      B    O
ATOM 1231  C   SER B 153     -58.894  51.118  23.425  1.00 44.17      B    C
ATOM 1232  O   SER B 153     -59.531  51.894  22.718  1.00 44.17      B    O
ATOM 1233  N   GLU B 154     -58.543  49.901  23.029  1.00 57.97      B    N
ATOM 1234  CA  GLU B 154     -58.858  49.405  21.700  1.00 57.97      B    C
ATOM 1235  CB  GLU B 154     -57.711  48.529  21.199  1.00101.74      B    C
ATOM 1236  CG  GLU B 154     -57.398  48.712  19.741  1.00101.74      B    C
ATOM 1237  CD  GLU B 154     -56.839  50.081  19.464  1.00101.74      B    C
ATOM 1238  OE1 GLU B 154     -55.705  50.349  19.909  1.00101.74      B    O
ATOM 1239  OE2 GLU B 154     -57.534  50.891  18.814  1.00101.74      B    O
ATOM 1240  C   GLU B 154     -60.151  48.595  21.667  1.00 57.97      B    C
ATOM 1241  O   GLU B 154     -60.787  48.468  20.625  1.00 57.97      B    O
ATOM 1242  N   THR B 155     -60.537  48.052  22.815  1.00 45.91      B    N
ATOM 1243  CA  THR B 155     -61.729  47.217  22.908  1.00 45.91      B    C
ATOM 1244  CB  THR B 155     -61.389  45.897  23.586  1.00 42.29      B    C
ATOM 1245  OG1 THR B 155     -60.382  45.231  22.821  1.00 42.29      B    O
ATOM 1246  CG2 THR B 155     -62.620  45.010  23.707  1.00 42.29      B    C
ATOM 1247  C   THR B 155     -62.871  47.837  23.684  1.00 45.91      B    C
ATOM 1248  O   THR B 155     -62.651  48.571  24.640  1.00 45.91      B    O
ATOM 1249  N   PRO B 156     -64.117  47.544  23.279  1.00 41.63      B    N
ATOM 1250  CD  PRO B 156     -64.547  46.799  22.082  1.00 50.27      B    C
ATOM 1251  CA  PRO B 156     -65.278  48.094  23.983  1.00 41.63      B    C
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Figure 8-20

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ATOM 1252  CB  PRO B 156     -66.427  47.795  23.023  1.00 50.27      B     C
ATOM 1253  CG  PRO B 156     -65.996  46.514  22.393  1.00 50.27      B     C
ATOM 1254  C   PRO B 156     -65.448  47.403  25.339  1.00 41.63      B     C
ATOM 1255  O   PRO B 156     -65.051  46.247  25.515  1.00 41.63      B     O
ATOM 1256  N   THR B 157     -66.029  48.120  26.293  1.00 32.98      B     N
ATOM 1257  CA  THR B 157     -66.240  47.564  27.620  1.00 32.98      B     C
ATOM 1258  CB  THR B 157     -66.884  48.593  28.561  1.00 34.48      B     C
ATOM 1259  OG1 THR B 157     -68.231  48.863  28.147  1.00 34.48      B     O
ATOM 1260  CG2 THR B 157     -66.101  49.875  28.524  1.00 34.48      B     C
ATOM 1261  C   THR B 157     -67.141  46.347  27.521  1.00 32.98      B     C
ATOM 1262  O   THR B 157     -68.032  46.295  26.681  1.00 32.98      B     O
ATOM 1263  N   ILE B 158     -66.908  45.373  28.386  1.00 48.85      B     N
ATOM 1264  CA  ILE B 158     -67.686  44.141  28.390  1.00 48.85      B     C
ATOM 1265  CB  ILE B 158     -66.841  42.991  28.934  1.00 34.29      B     C
ATOM 1266  CG2 ILE B 158     -67.599  41.696  28.841  1.00 34.29      B     C
ATOM 1267  CG1 ILE B 158     -65.543  42.896  28.151  1.00 34.29      B     C
ATOM 1268  CD1 ILE B 158     -64.601  41.860  28.692  1.00 34.29      B     C
ATOM 1269  C   ILE B 158     -68.956  44.228  29.233  1.00 48.85      B     C
ATOM 1270  O   ILE B 158     -68.911  44.640  30.394  1.00 48.85      B     O
ATOM 1271  N   GLN B 159     -70.085  43.830  28.654  1.00 49.07      B     N
ATOM 1272  CA  GLN B 159     -71.353  43.849  29.373  1.00 49.07      B     C
ATOM 1273  CB  GLN B 159     -72.446  44.422  28.486  1.00 65.88      B     C
ATOM 1274  CG  GLN B 159     -72.157  45.843  28.097  1.00 65.88      B     C
ATOM 1275  CD  GLN B 159     -71.989  46.734  29.306  1.00 65.88      B     C
ATOM 1276  OE1 GLN B 159     -71.252  47.719  29.264  1.00 65.88      B     O
ATOM 1277  NE2 GLN B 159     -72.680  46.397  30.395  1.00 65.88      B     N
ATOM 1278  C   GLN B 159     -71.696  42.431  29.775  1.00 49.07      B     C
ATOM 1279  O   GLN B 159     -71.629  41.529  28.953  1.00 49.07      B     O
ATOM 1280  N   LYS B 160     -72.063  42.225  31.034  1.00 70.14      B     N
ATOM 1281  CA  LYS B 160     -72.381  40.879  31.483  1.00 70.14      B     C
ATOM 1282  CB  LYS B 160     -71.094  40.054  31.518  1.00 98.39      B     C
ATOM 1283  CG  LYS B 160     -71.267  38.591  31.857  1.00 71.77      B     C
ATOM 1284  CD  LYS B 160     -69.929  37.872  31.738  1.00 71.77      B     C
ATOM 1285  CE  LYS B 160     -70.066  36.370  31.950  1.00 71.77      B     C
ATOM 1286  NZ  LYS B 160     -68.769  35.651  31.755  1.00 71.77      B     N
ATOM 1287  C   LYS B 160     -73.044  40.874  32.854  1.00 70.14      B     C
ATOM 1288  O   LYS B 160     -72.461  41.323  33.836  1.00 70.14      B     O
ATOM 1289  N   GLY B 161     -74.270  40.367  32.914  1.00 82.42      B     N
ATOM 1290  CA  GLY B 161     -74.982  40.303  34.177  1.00 82.42      B     C
ATOM 1291  C   GLY B 161     -75.251  41.647  34.821  1.00 82.42      B     C
ATOM 1292  O   GLY B 161     -75.086  41.803  36.027  1.00 82.42      B     O
ATOM 1293  N   SER B 162     -75.663  42.620  34.018  1.00 73.45      B     N
ATOM 1294  CA  SER B 162     -75.967  43.954  34.521  1.00 73.45      B     C
ATOM 1295  CB  SER B 162     -76.998  43.877  35.651  1.00142.75      B     C
ATOM 1296  OG  SER B 162     -77.377  45.173  36.085  1.00142.75      B     O
ATOM 1297  C   SER B 162     -74.725  44.695  35.005  1.00 73.45      B     C
ATOM 1298  O   SER B 162     -74.802  45.863  35.394  1.00 73.45      B     O
ATOM 1299  N   TYR B 163     -73.587  44.008  35.000  1.00 57.23      B     N
ATOM 1300  CA  TYR B 163     -72.323  44.623  35.397  1.00 57.23      B     C
ATOM 1301  CB  TYR B 163     -71.421  43.642  36.156  1.00 60.94      B     C
ATOM 1302  CG  TYR B 163     -71.741  43.413  37.614  1.00 60.94      B     C
ATOM 1303  CD1 TYR B 163     -72.576  44.274  38.317  1.00 60.94      B     C
ATOM 1304  CE1 TYR B 163     -72.835  44.074  39.670  1.00 60.94      B     C
ATOM 1305  CD2 TYR B 163     -71.169  42.342  38.301  1.00 60.94      B     C
ATOM 1306  CE2 TYR B 163     -71.414  42.133  39.648  1.00 60.94      B     C
ATOM 1307  CZ  TYR B 163     -72.249  42.999  40.329  1.00 60.94      B     C
ATOM 1308  OH  TYR B 163     -72.503  42.783  41.666  1.00 60.94      B     O
ATOM 1309  C   TYR B 163     -71.588  45.026  34.124  1.00 57.23      B     C
ATOM 1310  O   TYR B 163     -72.013  44.707  33.009  1.00 57.23      B     O
ATOM 1311  N   THR B 164     -70.476  45.724  34.299  1.00 37.58      B     N
ATOM 1312  CA  THR B 164     -69.649  46.137  33.175  1.00 37.58      B     C
ATOM 1313  CB  THR B 164     -69.933  47.589  32.780  1.00 20.95      B     C
ATOM 1314  OG1 THR B 164     -68.931  48.040  31.862  1.00 20.95      B     O
ATOM 1315  CG2 THR B 164     -69.933  48.450  33.987  1.00 20.95      B     C
ATOM 1316  C   THR B 164     -68.181  45.960  33.573  1.00 37.58      B     C
ATOM 1317  O   THR B 164     -67.744  46.453  34.614  1.00 37.58      B     O
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Figure 8-21

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ATOM 1318  N   PHE B 165     -67.442  45.226  32.744  1.00 38.01      B    N
ATOM 1319  CA  PHE B 165     -66.034  44.930  32.991  1.00 38.01      B    C
ATOM 1320  CB  PHE B 165     -65.799  43.423  32.929  1.00 38.65      B    C
ATOM 1321  CG  PHE B 165     -66.700  42.644  33.828  1.00 38.65      B    C
ATOM 1322  CD1 PHE B 165     -68.027  42.425  33.476  1.00 38.65      B    C
ATOM 1323  CD2 PHE B 165     -66.244  42.183  35.057  1.00 38.65      B    C
ATOM 1324  CE1 PHE B 165     -68.890  41.763  34.340  1.00 38.65      B    C
ATOM 1325  CE2 PHE B 165     -67.094  41.518  35.933  1.00 38.65      B    C
ATOM 1326  CZ  PHE B 165     -68.421  41.307  35.577  1.00 38.65      B    C
ATOM 1327  C   PHE B 165     -65.130  45.607  31.986  1.00 38.01      B    C
ATOM 1328  O   PHE B 165     -65.461  45.696  30.803  1.00 38.01      B    O
ATOM 1329  N   VAL B 166     -63.977  46.077  32.445  1.00 26.54      B    N
ATOM 1330  CA  VAL B 166     -63.073  46.739  31.526  1.00 26.54      B    C
ATOM 1331  CB  VAL B 166     -62.207  47.833  32.230  1.00 11.81      B    C
ATOM 1332  CG1 VAL B 166     -62.641  48.000  33.658  1.00 11.81      B    C
ATOM 1333  CG2 VAL B 166     -60.736  47.494  32.136  1.00 11.81      B    C
ATOM 1334  C   VAL B 166     -62.179  45.712  30.848  1.00 26.54      B    C
ATOM 1335  O   VAL B 166     -61.790  44.713  31.449  1.00 26.54      B    O
ATOM 1336  N   PRO B 167     -61.874  45.936  29.565  1.00 30.50      B    N
ATOM 1337  CD  PRO B 167     -62.437  47.007  28.732  1.00 41.12      B    C
ATOM 1338  CA  PRO B 167     -61.026  45.056  28.764  1.00 30.50      B    C
ATOM 1339  CB  PRO B 167     -61.192  45.605  27.350  1.00 41.12      B    C
ATOM 1340  CG  PRO B 167     -62.491  46.340  27.400  1.00 41.12      B    C
ATOM 1341  C   PRO B 167     -59.603  45.247  29.254  1.00 30.50      B    C
ATOM 1342  O   PRO B 167     -59.071  46.352  29.170  1.00 30.50      B    O
ATOM 1343  N   TRP B 168     -58.980  44.192  29.761  1.00 35.05      B    N
ATOM 1344  CA  TRP B 168     -57.614  44.326  30.253  1.00 36.28      B    C
ATOM 1345  CB  TRP B 168     -57.402  43.506  31.529  1.00 22.16      B    C
ATOM 1346  CG  TRP B 168     -58.251  43.948  32.664  1.00 16.42      B    C
ATOM 1347  CD2 TRP B 168     -58.264  45.248  33.270  1.00 16.99      B    C
ATOM 1348  CE2 TRP B 168     -59.263  45.226  34.278  1.00 16.38      B    C
ATOM 1349  CE3 TRP B 168     -57.531  46.430  33.061  1.00 18.12      B    C
ATOM 1350  CD1 TRP B 168     -59.206  43.212  33.307  1.00 19.27      B    C
ATOM 1351  NE1 TRP B 168     -59.818  43.973  34.276  1.00 22.25      B    N
ATOM 1352  CZ2 TRP B 168     -59.550  46.344  35.077  1.00 16.14      B    C
ATOM 1353  CZ3 TRP B 168     -57.816  47.547  33.858  1.00 21.88      B    C
ATOM 1354  CH2 TRP B 168     -58.817  47.491  34.854  1.00 20.09      B    C
ATOM 1355  C   TRP B 168     -56.559  43.925  29.250  1.00 36.59      B    C
ATOM 1356  O   TRP B 168     -56.759  43.038  28.428  1.00 38.25      B    O
ATOM 1357  N   LEU B 169     -55.426  44.599  29.349  1.00 36.26      B    N
ATOM 1358  CA  LEU B 169     -54.279  44.349  28.503  1.00 36.73      B    C
ATOM 1359  CB  LEU B 169     -54.008  45.580  27.652  1.00 29.10      B    C
ATOM 1360  CG  LEU B 169     -53.799  45.321  26.170  1.00 29.10      B    C
ATOM 1361  CD1 LEU B 169     -54.017  46.610  25.412  1.00 29.10      B    C
ATOM 1362  CD2 LEU B 169     -52.395  44.767  25.947  1.00 29.10      B    C
ATOM 1363  C   LEU B 169     -53.159  44.122  29.509  1.00 37.36      B    C
ATOM 1364  O   LEU B 169     -53.025  44.884  30.467  1.00 35.71      B    O
ATOM 1365  N   LEU B 170     -52.365  43.077  29.323  1.00 24.83      B    N
ATOM 1366  CA  LEU B 170     -51.296  42.800  30.278  1.00 24.83      B    C
ATOM 1367  CB  LEU B 170     -50.668  41.435  30.020  1.00 34.30      B    C
ATOM 1368  CG  LEU B 170     -49.474  41.179  30.943  1.00 34.30      B    C
ATOM 1369  CD1 LEU B 170     -49.967  40.975  32.365  1.00 34.30      B    C
ATOM 1370  CD2 LEU B 170     -48.716  39.963  30.482  1.00 34.30      B    C
ATOM 1371  C   LEU B 170     -50.185  43.834  30.304  1.00 24.83      B    C
ATOM 1372  O   LEU B 170     -49.407  43.931  29.367  1.00 25.58      B    O
ATOM 1373  N   SER B 171     -50.112  44.599  31.385  1.00 49.53      B    N
ATOM 1374  CA  SER B 171     -49.064  45.600  31.537  1.00 49.54      B    C
ATOM 1375  CB  SER B 171     -49.305  46.450  32.788  1.00 52.35      B    C
ATOM 1376  OG  SER B 171     -48.149  47.194  33.133  1.00 52.35      B    O
ATOM 1377  C   SER B 171     -47.749  44.850  31.679  1.00 47.93      B    C
ATOM 1378  O   SER B 171     -46.793  45.118  30.968  1.00 47.63      B    O
ATOM 1379  N   PHE B 172     -47.709  43.908  32.610  1.00 39.25      B    N
ATOM 1380  CA  PHE B 172     -46.523  43.114  32.830  1.00 35.77      B    C
ATOM 1381  CB  PHE B 172     -45.381  43.987  33.357  1.00 63.68      B    C
ATOM 1382  CG  PHE B 172     -45.455  44.262  34.823  1.00 42.34      B    C
ATOM 1383  CD1 PHE B 172     -45.047  43.301  35.745  1.00 42.34      B    C
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Figure 8-22

ATOM	1384	CD2	PHE	B	172	-45.977	45.466	35.292	1.00	42.34	B	C
ATOM	1385	CE1	PHE	B	172	-45.162	43.529	37.125	1.00	42.34	B	C
ATOM	1386	CE2	PHE	B	172	-46.097	45.711	36.666	1.00	42.34	B	C
ATOM	1387	CZ	PHE	B	172	-45.688	44.735	37.587	1.00	42.34	B	C
ATOM	1388	C	PHE	B	172	-46.855	42.015	33.828	1.00	37.31	B	C
ATOM	1389	O	PHE	B	172	-47.758	42.158	34.656	1.00	38.10	B	O
ATOM	1390	N	LYS	B	173	-46.124	40.913	33.733	1.00	32.63	B	N
ATOM	1391	CA	LYS	B	173	-46.302	39.777	34.613	1.00	31.67	B	C
ATOM	1392	CB	LYS	B	173	-46.837	38.581	33.825	1.00	25.94	B	C
ATOM	1393	CG	LYS	B	173	-46.812	37.254	34.552	1.00	44.94	B	C
ATOM	1394	CD	LYS	B	173	-47.246	36.142	33.616	1.00	44.94	B	C
ATOM	1395	CE	LYS	B	173	-47.277	34.805	34.323	1.00	44.94	B	C
ATOM	1396	NZ	LYS	B	173	-45.933	34.458	34.869	1.00	44.94	B	N
ATOM	1397	C	LYS	B	173	-44.913	39.488	35.121	1.00	33.45	B	C
ATOM	1398	O	LYS	B	173	-43.970	39.451	34.345	1.00	34.94	B	O
ATOM	1399	N	ARG	B	174	-44.775	39.308	36.422	1.00	24.34	B	N
ATOM	1400	CA	ARG	B	174	-43.473	39.026	36.994	1.00	24.34	B	C
ATOM	1401	CB	ARG	B	174	-42.934	40.265	37.699	1.00	43.38	B	C
ATOM	1402	CG	ARG	B	174	-41.536	40.107	38.244	1.00	43.38	B	C
ATOM	1403	CD	ARG	B	174	-41.219	41.194	39.241	1.00	43.38	B	C
ATOM	1404	NE	ARG	B	174	-39.853	41.086	39.733	1.00	43.38	B	N
ATOM	1405	CZ	ARG	B	174	-39.478	41.412	40.967	1.00	43.38	B	C
ATOM	1406	NH1	ARG	B	174	-40.370	41.864	41.837	1.00	43.38	B	N
ATOM	1407	NH2	ARG	B	174	-38.210	41.287	41.337	1.00	43.38	B	N
ATOM	1408	C	ARG	B	174	-43.593	37.890	37.995	1.00	24.34	B	C
ATOM	1409	O	ARG	B	174	-44.215	38.046	39.051	1.00	24.34	B	O
ATOM	1410	N	GLY	B	175	-43.013	36.740	37.664	1.00	23.89	B	N
ATOM	1411	CA	GLY	B	175	-43.073	35.617	38.579	1.00	23.89	B	C
ATOM	1412	C	GLY	B	175	-44.037	34.516	38.192	1.00	23.89	B	C
ATOM	1413	O	GLY	B	175	-44.729	34.597	37.171	1.00	23.89	B	O
ATOM	1414	N	SER	B	176	-44.075	33.485	39.035	1.00	40.34	B	N
ATOM	1415	CA	SER	B	176	-44.916	32.311	38.838	1.00	40.34	B	C
ATOM	1416	CB	SER	B	176	-44.294	31.116	39.557	1.00	65.04	B	C
ATOM	1417	OG	SER	B	176	-43.878	31.476	40.866	1.00	65.04	B	O
ATOM	1418	C	SER	B	176	-46.349	32.500	39.303	1.00	40.34	B	C
ATOM	1419	O	SER	B	176	-47.268	32.282	38.533	1.00	40.34	B	O
ATOM	1420	N	ALA	B	177	-46.543	32.890	40.557	1.00	51.80	B	N
ATOM	1421	CA	ALA	B	177	-47.893	33.100	41.078	1.00	51.80	B	C
ATOM	1422	CB	ALA	B	177	-47.844	33.481	42.544	1.00	40.00	B	C
ATOM	1423	C	ALA	B	177	-48.486	34.232	40.283	1.00	51.80	B	C
ATOM	1424	O	ALA	B	177	-47.747	35.073	39.764	1.00	51.80	B	O
ATOM	1425	N	LEU	B	178	-49.806	34.270	40.173	1.00	36.61	B	N
ATOM	1426	CA	LEU	B	178	-50.432	35.354	39.415	1.00	36.61	B	C
ATOM	1427	CB	LEU	B	178	-49.998	36.708	39.984	1.00	44.28	B	C
ATOM	1428	CG	LEU	B	178	-50.826	37.411	41.056	1.00	25.35	B	C
ATOM	1429	CD1	LEU	B	178	-51.522	36.410	41.968	1.00	25.35	B	C
ATOM	1430	CD2	LEU	B	178	-49.899	38.329	41.837	1.00	25.35	B	C
ATOM	1431	C	LEU	B	178	-50.126	35.357	37.915	1.00	36.61	B	C
ATOM	1432	O	LEU	B	178	-48.979	35.501	37.500	1.00	36.61	B	O
ATOM	1433	N	GLU	B	179	-51.164	35.186	37.108	1.00	37.67	B	N
ATOM	1434	CA	GLU	B	179	-51.048	35.231	35.658	1.00	37.67	B	C
ATOM	1435	CB	GLU	B	179	-50.589	33.892	35.078	1.00	89.63	B	C
ATOM	1436	CG	GLU	B	179	-51.415	32.696	35.447	1.00	38.83	B	C
ATOM	1437	CD	GLU	B	179	-50.775	31.383	34.980	1.00	38.83	B	C
ATOM	1438	OE1	GLU	B	179	-49.642	31.068	35.426	1.00	38.83	B	O
ATOM	1439	OE2	GLU	B	179	-51.406	30.667	34.169	1.00	38.83	B	O
ATOM	1440	C	GLU	B	179	-52.437	35.613	35.194	1.00	37.67	B	C
ATOM	1441	O	GLU	B	179	-53.393	35.462	35.945	1.00	37.67	B	O
ATOM	1442	N	GLU	B	180	-52.554	36.156	33.989	1.00	37.08	B	N
ATOM	1443	CA	GLU	B	180	-53.858	36.582	33.483	1.00	37.08	B	C
ATOM	1444	CB	GLU	B	180	-53.672	37.676	32.441	1.00	44.73	B	C
ATOM	1445	CG	GLU	B	180	-54.924	38.041	31.684	1.00	44.73	B	C
ATOM	1446	CD	GLU	B	180	-54.683	39.191	30.722	1.00	44.73	B	C
ATOM	1447	OE1	GLU	B	180	-53.598	39.220	30.102	1.00	54.52	B	O
ATOM	1448	OE2	GLU	B	180	-55.575	40.061	30.576	1.00	54.52	B	O
ATOM	1449	C	GLU	B	180	-54.666	35.432	32.894	1.00	37.08	B	C

Figure 8-23

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ATOM 1450  O   GLU B 180     -54.211  34.754  31.976  1.00 37.08      B    O
ATOM 1451  N   LYS B 181     -55.866  35.217  33.431  1.00 57.04      B    N
ATOM 1452  CA  LYS B 181     -56.730  34.139  32.967  1.00 57.04      B    C
ATOM 1453  CB  LYS B 181     -57.565  33.589  34.122  1.00 69.98      B    C
ATOM 1454  CG  LYS B 181     -58.459  32.403  33.762  1.00 69.98      B    C
ATOM 1455  CD  LYS B 181     -57.661  31.140  33.529  1.00 69.98      B    C
ATOM 1456  CE  LYS B 181     -58.575  29.936  33.437  1.00 69.98      B    C
ATOM 1457  NZ  LYS B 181     -57.794  28.670  33.435  1.00 69.98      B    N
ATOM 1458  C   LYS B 181     -57.648  34.624  31.867  1.00 57.04      B    C
ATOM 1459  O   LYS B 181     -57.211  34.867  30.747  1.00 57.04      B    O
ATOM 1460  N   GLU B 182     -58.925  34.771  32.180  1.00 33.61      B    N
ATOM 1461  CA  GLU B 182     -59.878  35.218  31.180  1.00 33.61      B    C
ATOM 1462  CB  GLU B 182     -61.080  34.286  31.158  1.00 97.43      B    C
ATOM 1463  CG  GLU B 182     -60.681  32.832  31.083  1.00 97.43      B    C
ATOM 1464  CD  GLU B 182     -61.867  31.910  31.059  1.00 97.43      B    C
ATOM 1465  OE1 GLU B 182     -62.547  31.856  30.015  1.00 97.43      B    O
ATOM 1466  OE2 GLU B 182     -62.122  31.247  32.088  1.00 97.43      B    O
ATOM 1467  C   GLU B 182     -60.302  36.630  31.522  1.00 33.61      B    C
ATOM 1468  O   GLU B 182     -61.431  36.870  31.946  1.00 33.61      B    O
ATOM 1469  N   ASN B 183     -59.374  37.562  31.331  1.00 23.60      B    N
ATOM 1470  CA  ASN B 183     -59.608  38.965  31.628  1.00 23.60      B    C
ATOM 1471  CB  ASN B 183     -60.888  39.468  30.972  1.00 32.15      B    C
ATOM 1472  CG  ASN B 183     -60.958  40.979  30.945  1.00 32.15      B    C
ATOM 1473  OD1 ASN B 183     -60.114  41.641  30.337  1.00 32.15      B    O
ATOM 1474  ND2 ASN B 183     -61.958  41.537  31.611  1.00 32.15      B    N
ATOM 1475  C   ASN B 183     -59.690  39.173  33.128  1.00 23.60      B    C
ATOM 1476  O   ASN B 183     -60.243  40.162  33.604  1.00 23.60      B    O
ATOM 1477  N   LYS B 184     -59.147  38.214  33.869  1.00 28.38      B    N
ATOM 1478  CA  LYS B 184     -59.107  38.307  35.313  1.00 28.38      B    C
ATOM 1479  CB  LYS B 184     -60.264  37.528  35.941  1.00 58.49      B    C
ATOM 1480  CG  LYS B 184     -60.878  36.476  35.056  1.00 58.49      B    C
ATOM 1481  CD  LYS B 184     -62.181  35.982  35.669  1.00 58.49      B    C
ATOM 1482  CE  LYS B 184     -62.827  34.898  34.825  1.00 58.49      B    C
ATOM 1483  NZ  LYS B 184     -64.050  34.366  35.481  1.00 58.49      B    N
ATOM 1484  C   LYS B 184     -57.760  37.799  35.816  1.00 28.38      B    C
ATOM 1485  O   LYS B 184     -57.035  37.121  35.089  1.00 28.38      B    O
ATOM 1486  N   ILE B 185     -57.408  38.161  37.043  1.00 24.83      B    N
ATOM 1487  CA  ILE B 185     -56.144  37.722  37.618  1.00 23.32      B    C
ATOM 1488  CB  ILE B 185     -55.634  38.721  38.675  1.00 18.04      B    C
ATOM 1489  CG2 ILE B 185     -54.355  38.186  39.299  1.00 18.04      B    C
ATOM 1490  CG1 ILE B 185     -55.426  40.094  38.024  1.00 18.04      B    C
ATOM 1491  CD1 ILE B 185     -55.094  41.205  39.000  1.00 18.04      B    C
ATOM 1492  C   ILE B 185     -56.314  36.354  38.276  1.00 23.78      B    C
ATOM 1493  O   ILE B 185     -57.165  36.167  39.149  1.00 26.97      B    O
ATOM 1494  N   LEU B 186     -55.494  35.400  37.849  1.00 37.76      B    N
ATOM 1495  CA  LEU B 186     -55.549  34.043  38.384  1.00 36.96      B    C
ATOM 1496  CB  LEU B 186     -55.456  33.024  37.247  1.00 26.54      B    C
ATOM 1497  CG  LEU B 186     -55.296  31.568  37.699  1.00 26.54      B    C
ATOM 1498  CD1 LEU B 186     -56.440  31.198  38.637  1.00 26.54      B    C
ATOM 1499  CD2 LEU B 186     -55.266  30.651  36.492  1.00 26.54      B    C
ATOM 1500  C   LEU B 186     -54.440  33.775  39.389  1.00 34.10      B    C
ATOM 1501  O   LEU B 186     -53.262  33.937  39.080  1.00 41.03      B    O
ATOM 1502  N   VAL B 187     -54.821  33.354  40.590  1.00 18.15      B    N
ATOM 1503  CA  VAL B 187     -53.842  33.071  41.631  1.00 19.65      B    C
ATOM 1504  CB  VAL B 187     -54.466  33.121  43.038  1.00 30.90      B    C
ATOM 1505  CG1 VAL B 187     -53.424  32.715  44.080  1.00 28.95      B    C
ATOM 1506  CG2 VAL B 187     -54.988  34.514  43.322  1.00 37.96      B    C
ATOM 1507  C   VAL B 187     -53.268  31.683  41.431  1.00 21.86      B    C
ATOM 1508  O   VAL B 187     -54.008  30.704  41.408  1.00 24.18      B    O
ATOM 1509  N   LYS B 188     -51.949  31.598  41.302  1.00 44.97      B    N
ATOM 1510  CA  LYS B 188     -51.311  30.307  41.097  1.00 46.86      B    C
ATOM 1511  CB  LYS B 188     -50.297  30.405  39.955  1.00 40.95      B    C
ATOM 1512  CG  LYS B 188     -50.905  30.194  38.580  1.00 44.93      B    C
ATOM 1513  CD  LYS B 188     -51.443  28.784  38.466  1.00 50.22      B    C
ATOM 1514  CE  LYS B 188     -52.245  28.575  37.193  1.00 55.18      B    C
ATOM 1515  NZ  LYS B 188     -51.423  28.675  35.952  1.00 40.35      B    N
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Figure 8-24

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ATOM 1516  C   LYS B 188     -50.649  29.733  42.348  1.00 44.67      B    C
ATOM 1517  O   LYS B 188     -50.404  28.532  42.424  1.00 47.25      B    O
ATOM 1518  N   GLU B 189     -50.359  30.588  43.324  1.00 59.54      B    N
ATOM 1519  CA  GLU B 189     -49.738  30.146  44.570  1.00 62.23      B    C
ATOM 1520  CB  GLU B 189     -48.270  30.549  44.627  1.00 72.82      B    C
ATOM 1521  CG  GLU B 189     -47.455  30.093  43.452  1.00 72.82      B    C
ATOM 1522  CD  GLU B 189     -46.023  30.560  43.543  1.00 72.82      B    C
ATOM 1523  OE1 GLU B 189     -45.263  30.311  42.585  1.00 72.82      B    O
ATOM 1524  OE2 GLU B 189     -45.659  31.174  44.572  1.00 72.82      B    O
ATOM 1525  C   GLU B 189     -50.456  30.810  45.721  1.00 59.75      B    C
ATOM 1526  O   GLU B 189     -50.435  32.034  45.854  1.00 60.31      B    O
ATOM 1527  N   THR B 190     -51.093  30.008  46.558  1.00 28.63      B    N
ATOM 1528  CA  THR B 190     -51.810  30.562  47.690  1.00 30.20      B    C
ATOM 1529  CB  THR B 190     -52.541  29.449  48.455  1.00 23.74      B    C
ATOM 1530  OG1 THR B 190     -52.321  29.619  49.855  1.00 23.74      B    O
ATOM 1531  CG2 THR B 190     -52.049  28.091  48.023  1.00 23.74      B    C
ATOM 1532  C   THR B 190     -50.850  31.340  48.614  1.00 28.68      B    C
ATOM 1533  O   THR B 190     -49.701  30.942  48.827  1.00 29.33      B    O
ATOM 1534  N   GLY B 191     -51.332  32.471  49.127  1.00 34.98      B    N
ATOM 1535  CA  GLY B 191     -50.533  33.320  49.998  1.00 36.43      B    C
ATOM 1536  C   GLY B 191     -51.189  34.673  50.228  1.00 36.63      B    C
ATOM 1537  O   GLY B 191     -52.376  34.835  49.963  1.00 39.34      B    O
ATOM 1538  N   TYR B 192     -50.428  35.641  50.732  1.00 19.53      B    N
ATOM 1539  CA  TYR B 192     -50.965  36.980  50.980  1.00 19.07      B    C
ATOM 1540  CB  TYR B 192     -50.380  37.577  52.267  1.00 19.88      B    C
ATOM 1541  CG  TYR B 192     -50.919  36.928  53.518  1.00 19.88      B    C
ATOM 1542  CD1 TYR B 192     -50.453  35.692  53.931  1.00 19.88      B    C
ATOM 1543  CE1 TYR B 192     -50.989  35.062  55.032  1.00 19.88      B    C
ATOM 1544  CD2 TYR B 192     -51.950  37.527  54.257  1.00 19.88      B    C
ATOM 1545  CE2 TYR B 192     -52.497  36.899  55.370  1.00 19.88      B    C
ATOM 1546  CZ  TYR B 192     -52.007  35.663  55.744  1.00 19.88      B    C
ATOM 1547  OH  TYR B 192     -52.545  35.002  56.818  1.00 19.88      B    O
ATOM 1548  C   TYR B 192     -50.688  37.913  49.807  1.00 17.31      B    C
ATOM 1549  O   TYR B 192     -49.580  37.940  49.265  1.00 18.36      B    O
ATOM 1550  N   PHE B 193     -51.698  38.674  49.403  1.00 37.11      B    N
ATOM 1551  CA  PHE B 193     -51.512  39.581  48.286  1.00 37.11      B    C
ATOM 1552  CB  PHE B 193     -52.173  39.037  47.016  1.00 16.71      B    C
ATOM 1553  CG  PHE B 193     -51.611  37.719  46.533  1.00 16.71      B    C
ATOM 1554  CD1 PHE B 193     -51.903  36.521  47.204  1.00 16.71      B    C
ATOM 1555  CD2 PHE B 193     -50.826  37.669  45.378  1.00 16.71      B    C
ATOM 1556  CE1 PHE B 193     -51.424  35.303  46.729  1.00 16.71      B    C
ATOM 1557  CE2 PHE B 193     -50.343  36.457  44.896  1.00 16.71      B    C
ATOM 1558  CZ  PHE B 193     -50.643  35.270  45.572  1.00 16.71      B    C
ATOM 1559  C   PHE B 193     -52.041  40.988  48.518  1.00 37.11      B    C
ATOM 1560  O   PHE B 193     -53.081  41.199  49.156  1.00 37.11      B    O
ATOM 1561  N   PHE B 194     -51.289  41.948  47.993  1.00 22.96      B    N
ATOM 1562  CA  PHE B 194     -51.664  43.343  48.045  1.00 23.44      B    C
ATOM 1563  CB  PHE B 194     -50.424  44.234  48.088  1.00 32.03      B    C
ATOM 1564  CG  PHE B 194     -50.731  45.698  47.962  1.00 32.03      B    C
ATOM 1565  CD1 PHE B 194     -51.405  46.367  48.978  1.00 32.03      B    C
ATOM 1566  CD2 PHE B 194     -50.370  46.404  46.816  1.00 32.03      B    C
ATOM 1567  CE1 PHE B 194     -51.714  47.720  48.853  1.00 32.03      B    C
ATOM 1568  CE2 PHE B 194     -50.672  47.752  46.682  1.00 32.03      B    C
ATOM 1569  CZ  PHE B 194     -51.347  48.413  47.702  1.00 32.03      B    C
ATOM 1570  C   PHE B 194     -52.388  43.500  46.702  1.00 23.83      B    C
ATOM 1571  O   PHE B 194     -51.810  43.252  45.647  1.00 25.95      B    O
ATOM 1572  N   ILE B 195     -53.657  43.883  46.749  1.00 37.35      B    N
ATOM 1573  CA  ILE B 195     -54.454  44.031  45.543  1.00 34.56      B    C
ATOM 1574  CB  ILE B 195     -55.679  43.128  45.610  1.00 20.15      B    C
ATOM 1575  CG2 ILE B 195     -56.449  43.198  44.300  1.00 20.15      B    C
ATOM 1576  CG1 ILE B 195     -55.241  41.700  45.935  1.00 20.15      B    C
ATOM 1577  CD1 ILE B 195     -56.394  40.743  46.185  1.00 20.15      B    C
ATOM 1578  C   ILE B 195     -54.927  45.464  45.392  1.00 33.53      B    C
ATOM 1579  O   ILE B 195     -55.423  46.056  46.345  1.00 32.15      B    O
ATOM 1580  N   TYR B 196     -54.789  46.018  44.193  1.00 16.88      B    N
ATOM 1581  CA  TYR B 196     -55.202  47.395  43.951  1.00 20.13      B    C
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Figure 8-25

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ATOM 1582  CB  TYR B 196     -53.992  48.330  43.979  1.00 27.48      B    C
ATOM 1583  CG  TYR B 196     -52.915  47.944  42.994  1.00 22.37      B    C
ATOM 1584  CD1 TYR B 196     -52.026  46.911  43.275  1.00 25.68      B    C
ATOM 1585  CE1 TYR B 196     -51.052  46.522  42.352  1.00 24.04      B    C
ATOM 1586  CD2 TYR B 196     -52.809  48.582  41.762  1.00 25.82      B    C
ATOM 1587  CE2 TYR B 196     -51.844  48.196  40.832  1.00 28.99      B    C
ATOM 1588  CZ  TYR B 196     -50.970  47.167  41.139  1.00 25.10      B    C
ATOM 1589  OH  TYR B 196     -50.003  46.793  40.246  1.00 25.33      B    O
ATOM 1590  C   TYR B 196     -55.904  47.546  42.614  1.00 21.38      B    C
ATOM 1591  O   TYR B 196     -55.606  46.832  41.663  1.00 18.59      B    O
ATOM 1592  N   GLY B 197     -56.833  48.490  42.545  1.00 33.97      B    N
ATOM 1593  CA  GLY B 197     -57.559  48.717  41.313  1.00 32.79      B    C
ATOM 1594  C   GLY B 197     -58.084  50.136  41.243  1.00 33.54      B    C
ATOM 1595  O   GLY B 197     -58.596  50.667  42.234  1.00 31.88      B    O
ATOM 1596  N   GLN B 198     -57.947  50.754  40.074  1.00 42.78      B    N
ATOM 1597  CA  GLN B 198     -58.410  52.117  39.865  1.00 45.47      B    C
ATOM 1598  CB  GLN B 198     -57.249  53.102  39.947  1.00 21.98      B    C
ATOM 1599  CG  GLN B 198     -57.620  54.501  39.468  1.00 25.08      B    C
ATOM 1600  CD  GLN B 198     -56.456  55.457  39.523  1.00 28.34      B    C
ATOM 1601  OE1 GLN B 198     -55.904  55.699  40.585  1.00 27.00      B    O
ATOM 1602  NE2 GLN B 198     -56.071  56.004  38.373  1.00 25.59      B    N
ATOM 1603  C   GLN B 198     -59.066  52.268  38.513  1.00 45.42      B    C
ATOM 1604  O   GLN B 198     -58.606  51.706  37.526  1.00 46.25      B    O
ATOM 1605  N   VAL B 199     -60.146  53.030  38.470  1.00 14.67      B    N
ATOM 1606  CA  VAL B 199     -60.833  53.276  37.215  1.00 17.82      B    C
ATOM 1607  CB  VAL B 199     -62.027  52.268  36.977  1.00 11.14      B    C
ATOM 1608  CG1 VAL B 199     -62.412  51.590  38.256  1.00  9.90      B    C
ATOM 1609  CG2 VAL B 199     -63.227  52.984  36.384  1.00 12.61      B    C
ATOM 1610  C   VAL B 199     -61.317  54.720  37.187  1.00 19.95      B    C
ATOM 1611  O   VAL B 199     -61.726  55.274  38.214  1.00 18.67      B    O
ATOM 1612  N   LEU B 200     -61.228  55.338  36.010  1.00 29.98      B    N
ATOM 1613  CA  LEU B 200     -61.664  56.718  35.834  1.00 29.04      B    C
ATOM 1614  CB  LEU B 200     -60.754  57.420  34.822  1.00 22.82      B    C
ATOM 1615  CG  LEU B 200     -61.242  58.748  34.241  1.00 22.82      B    C
ATOM 1616  CD1 LEU B 200     -61.793  59.653  35.341  1.00 22.82      B    C
ATOM 1617  CD2 LEU B 200     -60.095  59.409  33.516  1.00 22.82      B    C
ATOM 1618  C   LEU B 200     -63.120  56.756  35.364  1.00 30.02      B    C
ATOM 1619  O   LEU B 200     -63.439  56.382  34.231  1.00 31.44      B    O
ATOM 1620  N   TYR B 201     -64.004  57.202  36.250  1.00 41.04      B    N
ATOM 1621  CA  TYR B 201     -65.423  57.281  35.930  1.00 41.30      B    C
ATOM 1622  CB  TYR B 201     -66.251  57.177  37.205  1.00 42.88      B    C
ATOM 1623  CG  TYR B 201     -66.083  55.825  37.837  1.00 42.88      B    C
ATOM 1624  CD1 TYR B 201     -66.563  54.689  37.202  1.00 42.88      B    C
ATOM 1625  CE1 TYR B 201     -66.318  53.427  37.707  1.00 42.88      B    C
ATOM 1626  CD2 TYR B 201     -65.354  55.662  39.011  1.00 42.88      B    C
ATOM 1627  CE2 TYR B 201     -65.103  54.397  39.525  1.00 42.88      B    C
ATOM 1628  CZ  TYR B 201     -65.589  53.286  38.860  1.00 42.88      B    C
ATOM 1629  OH  TYR B 201     -65.330  52.021  39.326  1.00 42.88      B    O
ATOM 1630  C   TYR B 201     -65.731  58.555  35.182  1.00 40.74      B    C
ATOM 1631  O   TYR B 201     -65.387  59.657  35.610  1.00 40.20      B    O
ATOM 1632  N   THR B 202     -66.371  58.387  34.037  1.00 45.73      B    N
ATOM 1633  CA  THR B 202     -66.717  59.507  33.191  1.00 50.98      B    C
ATOM 1634  CB  THR B 202     -65.956  59.387  31.865  1.00 51.38      B    C
ATOM 1635  OG1 THR B 202     -66.196  60.546  31.076  1.00 51.38      B    O
ATOM 1636  CG2 THR B 202     -66.399  58.163  31.101  1.00 51.38      B    C
ATOM 1637  C   THR B 202     -68.233  59.516  32.970  1.00 49.62      B    C
ATOM 1638  O   THR B 202     -68.747  60.162  32.067  1.00 48.75      B    O
ATOM 1639  N   ASP B 203     -68.935  58.783  33.826  1.00 37.62      B    N
ATOM 1640  CA  ASP B 203     -70.389  58.662  33.791  1.00 37.62      B    C
ATOM 1641  CB  ASP B 203     -70.775  57.251  34.257  1.00 59.44      B    C
ATOM 1642  CG  ASP B 203     -72.266  57.023  34.274  1.00 59.44      B    C
ATOM 1643  OD1 ASP B 203     -72.687  55.852  34.170  1.00 59.44      B    O
ATOM 1644  OD2 ASP B 203     -73.020  58.006  34.405  1.00 59.44      B    O
ATOM 1645  C   ASP B 203     -70.970  59.727  34.722  1.00 37.62      B    C
ATOM 1646  O   ASP B 203     -70.332  60.095  35.703  1.00 37.62      B    O
ATOM 1647  N   LYS B 204     -72.164  60.233  34.425  1.00 47.23      B    N
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Figure 8-26

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ATOM 1648  CA  LYS B 204     -72.739  61.263  35.278  1.00 47.23      B    C
ATOM 1649  CB  LYS B 204     -73.219  62.447  34.434  1.00 80.41      B    C
ATOM 1650  CG  LYS B 204     -74.350  62.135  33.480  1.00 80.41      B    C
ATOM 1651  CD  LYS B 204     -74.720  63.364  32.655  1.00 80.41      B    C
ATOM 1652  CE  LYS B 204     -73.565  63.809  31.757  1.00 80.41      B    C
ATOM 1653  NZ  LYS B 204     -73.908  65.004  30.938  1.00 80.41      B    N
ATOM 1654  C   LYS B 204     -73.851  60.824  36.229  1.00 47.23      B    C
ATOM 1655  O   LYS B 204     -74.619  61.663  36.701  1.00 47.23      B    O
ATOM 1656  N   THR B 205     -73.935  59.528  36.531  1.00 31.66      B    N
ATOM 1657  CA  THR B 205     -74.957  59.035  37.465  1.00 31.66      B    C
ATOM 1658  CB  THR B 205     -75.060  57.493  37.446  1.00 45.81      B    C
ATOM 1659  OG1 THR B 205     -73.894  56.929  38.045  1.00 45.81      B    O
ATOM 1660  CG2 THR B 205     -75.156  56.987  36.032  1.00 45.81      B    C
ATOM 1661  C   THR B 205     -74.543  59.493  38.861  1.00 31.66      B    C
ATOM 1662  O   THR B 205     -73.356  59.684  39.107  1.00 31.66      B    O
ATOM 1663  N   TYR B 206     -75.501  59.658  39.772  1.00 30.93      B    N
ATOM 1664  CA  TYR B 206     -75.205  60.146  41.130  1.00 30.93      B    C
ATOM 1665  CB  TYR B 206     -76.366  59.848  42.096  1.00 71.88      B    C
ATOM 1666  CG  TYR B 206     -76.478  58.412  42.540  1.00 71.88      B    C
ATOM 1667  CD1 TYR B 206     -76.671  58.090  43.884  1.00 71.88      B    C
ATOM 1668  CE1 TYR B 206     -76.794  56.764  44.301  1.00 71.88      B    C
ATOM 1669  CD2 TYR B 206     -76.409  57.374  41.618  1.00 71.88      B    C
ATOM 1670  CE2 TYR B 206     -76.530  56.044  42.019  1.00 71.88      B    C
ATOM 1671  CZ  TYR B 206     -76.722  55.743  43.362  1.00 71.88      B    C
ATOM 1672  OH  TYR B 206     -76.842  54.425  43.755  1.00 71.88      B    O
ATOM 1673  C   TYR B 206     -73.897  59.626  41.738  1.00 30.93      B    C
ATOM 1674  O   TYR B 206     -73.148  60.372  42.377  1.00 30.93      B    O
ATOM 1675  N   ALA B 207     -73.613  58.347  41.535  1.00 35.77      B    N
ATOM 1676  CA  ALA B 207     -72.394  57.770  42.076  1.00 35.77      B    C
ATOM 1677  CB  ALA B 207     -72.612  57.380  43.522  1.00 16.15      B    C
ATOM 1678  C   ALA B 207     -71.923  56.566  41.272  1.00 35.77      B    C
ATOM 1679  O   ALA B 207     -72.727  55.771  40.799  1.00 35.77      B    O
ATOM 1680  N   MET B 208     -70.607  56.449  41.119  1.00 27.75      B    N
ATOM 1681  CA  MET B 208     -69.995  55.345  40.386  1.00 27.75      B    C
ATOM 1682  CB  MET B 208     -69.327  55.856  39.112  1.00 28.38      B    C
ATOM 1683  CG  MET B 208     -70.295  56.351  38.062  1.00 28.38      B    C
ATOM 1684  SD  MET B 208     -71.333  55.022  37.479  1.00 28.38      B    S
ATOM 1685  CE  MET B 208     -70.288  54.265  36.241  1.00 28.38      B    C
ATOM 1686  C   MET B 208     -68.949  54.673  41.264  1.00 27.75      B    C
ATOM 1687  O   MET B 208     -68.570  55.200  42.315  1.00 27.75      B    O
ATOM 1688  N   GLY B 209     -68.480  53.508  40.835  1.00 32.42      B    N
ATOM 1689  CA  GLY B 209     -67.481  52.808  41.619  1.00 32.42      B    C
ATOM 1690  C   GLY B 209     -67.279  51.396  41.136  1.00 32.42      B    C
ATOM 1691  O   GLY B 209     -68.010  50.933  40.272  1.00 32.42      B    O
ATOM 1692  N   HIS B 210     -66.281  50.710  41.679  1.00 19.55      B    N
ATOM 1693  CA  HIS B 210     -66.021  49.338  41.270  1.00 19.55      B    C
ATOM 1694  CB  HIS B 210     -64.833  49.258  40.317  1.00 32.58      B    C
ATOM 1695  CG  HIS B 210     -63.584  49.887  40.844  1.00 32.58      B    C
ATOM 1696  CD2 HIS B 210     -62.376  49.355  41.150  1.00 32.58      B    C
ATOM 1697  ND1 HIS B 210     -63.473  51.242  41.072  1.00 32.58      B    N
ATOM 1698  CE1 HIS B 210     -62.250  51.518  41.492  1.00 32.58      B    C
ATOM 1699  NE2 HIS B 210     -61.564  50.391  41.547  1.00 32.58      B    N
ATOM 1700  C   HIS B 210     -65.783  48.420  42.432  1.00 19.55      B    C
ATOM 1701  O   HIS B 210     -65.558  48.862  43.560  1.00 19.55      B    O
ATOM 1702  N   LEU B 211     -65.838  47.130  42.134  1.00 18.41      B    N
ATOM 1703  CA  LEU B 211     -65.650  46.100  43.135  1.00 20.38      B    C
ATOM 1704  CB  LEU B 211     -66.872  45.188  43.190  1.00 20.90      B    C
ATOM 1705  CG  LEU B 211     -68.237  45.866  43.113  1.00 20.16      B    C
ATOM 1706  CD1 LEU B 211     -69.273  44.812  42.827  1.00 20.16      B    C
ATOM 1707  CD2 LEU B 211     -68.538  46.613  44.407  1.00 20.16      B    C
ATOM 1708  C   LEU B 211     -64.474  45.266  42.723  1.00 21.46      B    C
ATOM 1709  O   LEU B 211     -64.382  44.853  41.567  1.00 24.45      B    O
ATOM 1710  N   ILE B 212     -63.551  45.050  43.648  1.00 31.81      B    N
ATOM 1711  CA  ILE B 212     -62.422  44.183  43.373  1.00 29.52      B    C
ATOM 1712  CB  ILE B 212     -61.138  44.694  44.028  1.00 22.12      B    C
ATOM 1713  CG2 ILE B 212     -60.063  43.629  43.966  1.00 24.44      B    C
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Figure 8-27

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ATOM 1714  CG1 ILE B 212     -60.663  45.942  43.292  1.00 24.44      B     C
ATOM 1715  CD1 ILE B 212     -59.421  46.568  43.890  1.00 24.44      B     C
ATOM 1716  C   ILE B 212     -62.930  42.915  44.047  1.00 27.47      B     C
ATOM 1717  O   ILE B 212     -62.989  42.825  45.270  1.00 28.47      B     O
ATOM 1718  N   GLN B 213     -63.340  41.954  43.233  1.00 20.99      B     N
ATOM 1719  CA  GLN B 213     -63.902  40.720  43.738  1.00 22.17      B     C
ATOM 1720  CB  GLN B 213     -65.199  40.417  42.994  1.00 28.31      B     C
ATOM 1721  CG  GLN B 213     -66.149  41.597  42.929  1.00 34.74      B     C
ATOM 1722  CD  GLN B 213     -67.437  41.257  42.221  1.00 34.74      B     C
ATOM 1723  OE1 GLN B 213     -67.421  40.734  41.112  1.00 34.74      B     O
ATOM 1724  NE2 GLN B 213     -68.567  41.550  42.861  1.00 34.74      B     N
ATOM 1725  C   GLN B 213     -63.003  39.511  43.651  1.00 20.14      B     C
ATOM 1726  O   GLN B 213     -62.101  39.438  42.824  1.00 18.86      B     O
ATOM 1727  N   ARG B 214     -63.286  38.551  44.521  1.00 15.61      B     N
ATOM 1728  CA  ARG B 214     -62.564  37.290  44.589  1.00 16.18      B     C
ATOM 1729  CB  ARG B 214     -62.067  37.074  46.009  1.00 41.47      B     C
ATOM 1730  CG  ARG B 214     -61.434  35.740  46.229  1.00 33.45      B     C
ATOM 1731  CD  ARG B 214     -61.234  35.512  47.697  1.00 33.45      B     C
ATOM 1732  NE  ARG B 214     -60.500  34.283  47.945  1.00 33.45      B     N
ATOM 1733  CZ  ARG B 214     -60.497  33.646  49.106  1.00 33.45      B     C
ATOM 1734  NH1 ARG B 214     -61.197  34.136  50.119  1.00 33.45      B     N
ATOM 1735  NH2 ARG B 214     -59.809  32.518  49.249  1.00 33.45      B     N
ATOM 1736  C   ARG B 214     -63.490  36.129  44.195  1.00 14.83      B     C
ATOM 1737  O   ARG B 214     -64.551  35.945  44.793  1.00 15.85      B     O
ATOM 1738  N   LYS B 215     -63.092  35.368  43.178  1.00 24.28      B     N
ATOM 1739  CA  LYS B 215     -63.867  34.219  42.726  1.00 28.93      B     C
ATOM 1740  CB  LYS B 215     -63.792  34.110  41.207  1.00101.59      B     C
ATOM 1741  CG  LYS B 215     -64.944  33.377  40.554  1.00 88.82      B     C
ATOM 1742  CD  LYS B 215     -64.677  33.230  39.060  1.00 88.82      B     C
ATOM 1743  CE  LYS B 215     -65.917  32.823  38.281  1.00 88.82      B     C
ATOM 1744  NZ  LYS B 215     -66.925  33.925  38.213  1.00 88.82      B     N
ATOM 1745  C   LYS B 215     -63.169  33.027  43.376  1.00 27.17      B     C
ATOM 1746  O   LYS B 215     -62.091  32.623  42.934  1.00 26.27      B     O
ATOM 1747  N   LYS B 216     -63.769  32.475  44.429  1.00 47.68      B     N
ATOM 1748  CA  LYS B 216     -63.186  31.349  45.168  1.00 47.68      B     C
ATOM 1749  CB  LYS B 216     -63.816  31.264  46.555  1.00 53.49      B     C
ATOM 1750  CG  LYS B 216     -63.581  32.493  47.398  1.00 37.16      B     C
ATOM 1751  CD  LYS B 216     -64.137  32.336  48.806  1.00 37.16      B     C
ATOM 1752  CE  LYS B 216     -65.656  32.332  48.834  1.00 37.16      B     C
ATOM 1753  NZ  LYS B 216     -66.191  32.252  50.232  1.00 37.16      B     N
ATOM 1754  C   LYS B 216     -63.299  29.986  44.505  1.00 47.68      B     C
ATOM 1755  O   LYS B 216     -64.303  29.683  43.880  1.00 47.68      B     O
ATOM 1756  N   VAL B 217     -62.267  29.161  44.649  1.00 60.63      B     N
ATOM 1757  CA  VAL B 217     -62.305  27.824  44.079  1.00 60.63      B     C
ATOM 1758  CB  VAL B 217     -60.900  27.266  43.800  1.00 56.81      B     C
ATOM 1759  CG1 VAL B 217     -60.322  27.938  42.601  1.00 56.81      B     C
ATOM 1760  CG2 VAL B 217     -60.004  27.457  45.007  1.00 56.81      B     C
ATOM 1761  C   VAL B 217     -63.000  26.884  45.056  1.00 60.63      B     C
ATOM 1762  O   VAL B 217     -63.588  25.880  44.655  1.00 60.63      B     O
ATOM 1763  N   HIS B 218     -62.923  27.215  46.342  1.00 24.00      B     N
ATOM 1764  CA  HIS B 218     -63.548  26.411  47.405  1.00 24.00      B     C
ATOM 1765  CB  HIS B 218     -62.515  26.049  48.485  1.00 55.41      B     C
ATOM 1766  CG  HIS B 218     -61.319  25.315  47.978  1.00 55.41      B     C
ATOM 1767  CD2 HIS B 218     -60.050  25.265  48.442  1.00 55.41      B     C
ATOM 1768  ND1 HIS B 218     -61.369  24.461  46.896  1.00 55.41      B     N
ATOM 1769  CE1 HIS B 218     -60.179  23.913  46.716  1.00 55.41      B     C
ATOM 1770  NE2 HIS B 218     -59.362  24.385  47.642  1.00 55.41      B     N
ATOM 1771  C   HIS B 218     -64.692  27.202  48.101  1.00 24.00      B     C
ATOM 1772  O   HIS B 218     -64.527  28.366  48.366  1.00 24.00      B     O
ATOM 1773  N   VAL B 219     -65.827  26.596  48.463  1.00 24.94      B     N
ATOM 1774  CA  VAL B 219     -66.920  27.336  49.141  1.00 24.94      B     C
ATOM 1775  CB  VAL B 219     -68.042  27.734  48.154  1.00 13.01      B     C
ATOM 1776  CG1 VAL B 219     -69.037  28.638  48.824  1.00 13.01      B     C
ATOM 1777  CG2 VAL B 219     -67.458  28.435  46.965  1.00 13.01      B     C
ATOM 1778  C   VAL B 219     -67.556  26.490  50.239  1.00 24.94      B     C
ATOM 1779  O   VAL B 219     -67.600  25.276  50.131  1.00 24.94      B     O
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Figure 8-28

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ATOM 1780  N   PHE B 220     -68.063  27.120  51.292  1.00 34.32      B    N
ATOM 1781  CA  PHE B 220     -68.674  26.364  52.383  1.00 34.32      B    C
ATOM 1782  CB  PHE B 220     -67.637  26.079  53.461  1.00 12.03      B    C
ATOM 1783  CG  PHE B 220     -66.489  25.268  52.976  1.00 12.03      B    C
ATOM 1784  CD1 PHE B 220     -65.284  25.872  52.656  1.00 12.03      B    C
ATOM 1785  CD2 PHE B 220     -66.634  23.898  52.761  1.00 12.03      B    C
ATOM 1786  CE1 PHE B 220     -64.225  25.138  52.121  1.00 12.03      B    C
ATOM 1787  CE2 PHE B 220     -65.591  23.145  52.226  1.00 12.03      B    C
ATOM 1788  CZ  PHE B 220     -64.372  23.780  51.902  1.00 12.03      B    C
ATOM 1789  C   PHE B 220     -69.885  27.006  53.032  1.00 34.32      B    C
ATOM 1790  O   PHE B 220     -69.909  28.205  53.298  1.00 34.32      B    O
ATOM 1791  N   GLY B 221     -70.891  26.186  53.304  1.00 43.11      B    N
ATOM 1792  CA  GLY B 221     -72.098  26.684  53.933  1.00 43.11      B    C
ATOM 1793  C   GLY B 221     -72.833  27.757  53.149  1.00 43.11      B    C
ATOM 1794  O   GLY B 221     -72.978  27.699  51.929  1.00 43.11      B    O
ATOM 1795  N   ASP B 222     -73.301  28.763  53.860  1.00 40.41      B    N
ATOM 1796  CA  ASP B 222     -74.036  29.820  53.216  1.00 40.41      B    C
ATOM 1797  CB  ASP B 222     -74.982  30.449  54.225  1.00 72.29      B    C
ATOM 1798  CG  ASP B 222     -75.926  29.445  54.814  1.00 72.29      B    C
ATOM 1799  OD1 ASP B 222     -76.598  28.749  54.024  1.00 72.29      B    O
ATOM 1800  OD2 ASP B 222     -75.993  29.349  56.057  1.00 72.29      B    O
ATOM 1801  C   ASP B 222     -73.190  30.900  52.551  1.00 40.41      B    C
ATOM 1802  O   ASP B 222     -73.747  31.880  52.054  1.00 40.41      B    O
ATOM 1803  N   GLU B 223     -71.864  30.740  52.536  1.00 34.64      B    N
ATOM 1804  CA  GLU B 223     -70.984  31.736  51.908  1.00 34.64      B    C
ATOM 1805  CB  GLU B 223     -69.536  31.532  52.364  1.00 55.25      B    C
ATOM 1806  CG  GLU B 223     -69.206  32.174  53.709  1.00 55.25      B    C
ATOM 1807  CD  GLU B 223     -67.740  32.013  54.103  1.00 55.25      B    C
ATOM 1808  OE1 GLU B 223     -67.271  32.771  54.984  1.00 55.25      B    O
ATOM 1809  OE2 GLU B 223     -67.061  31.122  53.535  1.00 55.25      B    O
ATOM 1810  C   GLU B 223     -71.071  31.625  50.384  1.00 34.64      B    C
ATOM 1811  O   GLU B 223     -71.366  30.544  49.867  1.00 34.64      B    O
ATOM 1812  N   LEU B 224     -70.826  32.722  49.663  1.00 33.71      B    N
ATOM 1813  CA  LEU B 224     -70.893  32.682  48.190  1.00 33.71      B    C
ATOM 1814  CB  LEU B 224     -71.495  33.969  47.621  1.00 14.23      B    C
ATOM 1815  CG  LEU B 224     -72.431  34.802  48.483  1.00 14.23      B    C
ATOM 1816  CD1 LEU B 224     -71.673  36.035  48.975  1.00 14.23      B    C
ATOM 1817  CD2 LEU B 224     -73.638  35.202  47.672  1.00 14.23      B    C
ATOM 1818  C   LEU B 224     -69.530  32.463  47.534  1.00 33.71      B    C
ATOM 1819  O   LEU B 224     -68.493  32.688  48.157  1.00 33.71      B    O
ATOM 1820  N   SER B 225     -69.540  32.035  46.271  1.00 48.48      B    N
ATOM 1821  CA  SER B 225     -68.299  31.783  45.545  1.00 48.48      B    C
ATOM 1822  CB  SER B 225     -68.559  30.934  44.298  1.00 50.52      B    C
ATOM 1823  OG  SER B 225     -69.506  31.548  43.449  1.00 50.52      B    O
ATOM 1824  C   SER B 225     -67.605  33.081  45.153  1.00 48.48      B    C
ATOM 1825  O   SER B 225     -66.379  33.128  45.056  1.00 48.48      B    O
ATOM 1826  N   LEU B 226     -68.387  34.135  44.935  1.00 54.35      B    N
ATOM 1827  CA  LEU B 226     -67.828  35.431  44.560  1.00 53.12      B    C
ATOM 1828  CB  LEU B 226     -68.504  35.963  43.301  1.00 29.58      B    C
ATOM 1829  CG  LEU B 226     -67.887  37.238  42.720  1.00 29.58      B    C
ATOM 1830  CD1 LEU B 226     -66.521  36.926  42.118  1.00 29.58      B    C
ATOM 1831  CD2 LEU B 226     -68.794  37.812  41.657  1.00 29.58      B    C
ATOM 1832  C   LEU B 226     -68.038  36.432  45.676  1.00 48.59      B    C
ATOM 1833  O   LEU B 226     -69.172  36.739  46.026  1.00 49.36      B    O
ATOM 1834  N   VAL B 227     -66.954  36.948  46.237  1.00 48.08      B    N
ATOM 1835  CA  VAL B 227     -67.073  37.922  47.310  1.00 43.08      B    C
ATOM 1836  CB  VAL B 227     -66.557  37.354  48.630  1.00 19.33      B    C
ATOM 1837  CG1 VAL B 227     -67.366  36.130  49.005  1.00 19.33      B    C
ATOM 1838  CG2 VAL B 227     -65.081  37.005  48.507  1.00 19.33      B    C
ATOM 1839  C   VAL B 227     -66.256  39.139  46.939  1.00 38.91      B    C
ATOM 1840  O   VAL B 227     -65.220  39.016  46.295  1.00 29.82      B    O
ATOM 1841  N   THR B 228     -66.717  40.322  47.318  1.00 21.61      B    N
ATOM 1842  CA  THR B 228     -65.946  41.496  46.979  1.00 23.32      B    C
ATOM 1843  CB  THR B 228     -66.855  42.722  46.642  1.00 33.56      B    C
ATOM 1844  OG1 THR B 228     -66.906  43.611  47.758  1.00 33.56      B    O
ATOM 1845  CG2 THR B 228     -68.263  42.276  46.287  1.00 33.56      B    C
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Figure 8-29

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ATOM 1846  C   THR B 228     -65.001  41.818  48.134  1.00 21.61      B    C
ATOM 1847  O   THR B 228     -65.419  41.905  49.287  1.00 23.63      B    O
ATOM 1848  N   LEU B 229     -63.717  41.952  47.816  1.00 28.02      B    N
ATOM 1849  CA  LEU B 229     -62.699  42.268  48.809  1.00 24.71      B    C
ATOM 1850  CB  LEU B 229     -61.321  41.892  48.269  1.00 24.79      B    C
ATOM 1851  CG  LEU B 229     -60.844  40.444  48.421  1.00 24.79      B    C
ATOM 1852  CD1 LEU B 229     -61.994  39.538  48.729  1.00 24.79      B    C
ATOM 1853  CD2 LEU B 229     -60.128  40.020  47.149  1.00 24.79      B    C
ATOM 1854  C   LEU B 229     -62.730  43.749  49.176  1.00 24.60      B    C
ATOM 1855  O   LEU B 229     -62.859  44.098  50.346  1.00 24.95      B    O
ATOM 1856  N   PHE B 230     -62.604  44.614  48.176  1.00 33.60      B    N
ATOM 1857  CA  PHE B 230     -62.628  46.048  48.414  1.00 33.34      B    C
ATOM 1858  CB  PHE B 230     -61.213  46.636  48.368  1.00 61.88      B    C
ATOM 1859  CG  PHE B 230     -60.167  45.703  48.853  1.00 61.88      B    C
ATOM 1860  CD1 PHE B 230     -59.387  44.999  47.950  1.00 61.88      B    C
ATOM 1861  CD2 PHE B 230     -60.011  45.461  50.213  1.00 61.88      B    C
ATOM 1862  CE1 PHE B 230     -58.464  44.055  48.394  1.00 61.88      B    C
ATOM 1863  CE2 PHE B 230     -59.094  44.520  50.669  1.00 61.88      B    C
ATOM 1864  CZ  PHE B 230     -58.320  43.814  49.758  1.00 61.88      B    C
ATOM 1865  C   PHE B 230     -63.458  46.709  47.338  1.00 35.23      B    C
ATOM 1866  O   PHE B 230     -63.641  46.156  46.255  1.00 33.99      B    O
ATOM 1867  N   ARG B 231     -63.968  47.895  47.641  1.00 18.47      B    N
ATOM 1868  CA  ARG B 231     -64.739  48.625  46.666  1.00 20.31      B    C
ATOM 1869  CB  ARG B 231     -66.244  48.334  46.806  1.00 22.59      B    C
ATOM 1870  CG  ARG B 231     -66.903  48.789  48.091  1.00 22.59      B    C
ATOM 1871  CD  ARG B 231     -68.254  48.109  48.225  1.00 26.63      B    C
ATOM 1872  NE  ARG B 231     -69.080  48.688  49.279  1.00 33.97      B    N
ATOM 1873  CZ  ARG B 231     -69.692  49.863  49.175  1.00 44.47      B    C
ATOM 1874  NH1 ARG B 231     -69.569  50.571  48.063  1.00 40.70      B    N
ATOM 1875  NH2 ARG B 231     -70.424  50.328  50.179  1.00 45.24      B    N
ATOM 1876  C   ARG B 231     -64.439  50.113  46.767  1.00 22.45      B    C
ATOM 1877  O   ARG B 231     -63.978  50.627  47.800  1.00 25.44      B    O
ATOM 1878  N   CYS B 232     -64.699  50.786  45.654  1.00 38.53      B    N
ATOM 1879  CA  CYS B 232     -64.453  52.200  45.505  1.00 38.47      B    C
ATOM 1880  C   CYS B 232     -65.769  52.856  45.111  1.00 41.93      B    C
ATOM 1881  O   CYS B 232     -66.531  52.295  44.327  1.00 43.36      B    O
ATOM 1882  CB  CYS B 232     -63.436  52.384  44.383  1.00 43.39      B    C
ATOM 1883  SG  CYS B 232     -62.243  53.716  44.642  1.00 43.39      B    S
ATOM 1884  N   ILE B 233     -66.046  54.035  45.650  1.00 11.89      B    N
ATOM 1885  CA  ILE B 233     -67.278  54.731  45.294  1.00 12.87      B    C
ATOM 1886  CB  ILE B 233     -68.395  54.479  46.331  1.00 40.84      B    C
ATOM 1887  CG2 ILE B 233     -67.999  55.038  47.685  1.00 40.84      B    C
ATOM 1888  CG1 ILE B 233     -69.680  55.163  45.890  1.00 40.84      B    C
ATOM 1889  CD1 ILE B 233     -70.190  54.667  44.596  1.00 40.84      B    C
ATOM 1890  C   ILE B 233     -67.003  56.226  45.207  1.00 17.35      B    C
ATOM 1891  O   ILE B 233     -66.333  56.800  46.069  1.00 17.81      B    O
ATOM 1892  N   GLN B 234     -67.534  56.857  44.168  1.00 39.67      B    N
ATOM 1893  CA  GLN B 234     -67.312  58.278  43.965  1.00 43.56      B    C
ATOM 1894  CB  GLN B 234     -66.170  58.448  42.951  1.00 35.57      B    C
ATOM 1895  CG  GLN B 234     -65.498  59.803  42.953  1.00 35.57      B    C
ATOM 1896  CD  GLN B 234     -64.623  60.031  44.175  1.00 35.57      B    C
ATOM 1897  OE1 GLN B 234     -64.274  61.167  44.491  1.00 35.57      B    O
ATOM 1898  NE2 GLN B 234     -64.262  58.954  44.861  1.00 35.57      B    N
ATOM 1899  C   GLN B 234     -68.591  58.956  43.461  1.00 44.51      B    C
ATOM 1900  O   GLN B 234     -69.265  58.432  42.571  1.00 44.49      B    O
ATOM 1901  N   ASN B 235     -68.943  60.102  44.040  1.00 37.21      B    N
ATOM 1902  CA  ASN B 235     -70.133  60.822  43.585  1.00 40.65      B    C
ATOM 1903  CB  ASN B 235     -70.562  61.892  44.590  1.00 19.23      B    C
ATOM 1904  CG  ASN B 235     -71.340  61.322  45.766  1.00 19.23      B    C
ATOM 1905  OD1 ASN B 235     -72.376  60.676  45.588  1.00 19.23      B    O
ATOM 1906  ND2 ASN B 235     -70.847  61.568  46.976  1.00 19.23      B    N
ATOM 1907  C   ASN B 235     -69.748  61.498  42.280  1.00 38.55      B    C
ATOM 1908  O   ASN B 235     -68.618  61.968  42.133  1.00 35.86      B    O
ATOM 1909  N   MET B 236     -70.677  61.544  41.333  1.00 41.14      B    N
ATOM 1910  CA  MET B 236     -70.410  62.159  40.036  1.00 41.14      B    C
ATOM 1911  CB  MET B 236     -70.732  61.173  38.915  1.00 36.46      B    C
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Figure 8-30

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ATOM 1912  CG  MET B 236     -69.924  59.889  38.962  1.00 36.46      B    C
ATOM 1913  SD  MET B 236     -68.162  60.176  38.687  1.00 36.46      B    S
ATOM 1914  CE  MET B 236     -67.614  60.019  40.339  1.00 36.46      B    C
ATOM 1915  C   MET B 236     -71.234  63.424  39.838  1.00 41.14      B    C
ATOM 1916  O   MET B 236     -72.378  63.498  40.268  1.00 41.14      B    O
ATOM 1917  N   PRO B 237     -70.661  64.437  39.177  1.00 51.48      B    N
ATOM 1918  CD  PRO B 237     -69.262  64.530  38.722  1.00 30.78      B    C
ATOM 1919  CA  PRO B 237     -71.364  65.694  38.931  1.00 51.48      B    C
ATOM 1920  CB  PRO B 237     -70.225  66.666  38.701  1.00 30.78      B    C
ATOM 1921  CG  PRO B 237     -69.266  65.824  37.929  1.00 30.78      B    C
ATOM 1922  C   PRO B 237     -72.284  65.590  37.715  1.00 51.48      B    C
ATOM 1923  O   PRO B 237     -72.244  64.599  36.980  1.00 51.48      B    O
ATOM 1924  N   GLU B 238     -73.099  66.623  37.505  1.00 64.11      B    N
ATOM 1925  CA  GLU B 238     -74.036  66.674  36.386  1.00 64.11      B    C
ATOM 1926  CB  GLU B 238     -75.034  67.812  36.594  1.00129.74      B    C
ATOM 1927  CG  GLU B 238     -75.995  67.579  37.741  1.00129.74      B    C
ATOM 1928  CD  GLU B 238     -76.956  66.442  37.461  1.00129.74      B    C
ATOM 1929  OE1 GLU B 238     -76.487  65.336  37.116  1.00129.74      B    O
ATOM 1930  OE2 GLU B 238     -78.180  66.654  37.586  1.00129.74      B    O
ATOM 1931  C   GLU B 238     -73.330  66.859  35.049  1.00 64.11      B    C
ATOM 1932  O   GLU B 238     -73.662  66.195  34.063  1.00 64.11      B    O
ATOM 1933  N   THR B 239     -72.353  67.759  35.021  1.00 50.34      B    N
ATOM 1934  CA  THR B 239     -71.608  68.036  33.801  1.00 50.34      B    C
ATOM 1935  CB  THR B 239     -71.730  69.519  33.421  1.00 80.42      B    C
ATOM 1936  OG1 THR B 239     -71.167  70.328  34.459  1.00 80.42      B    O
ATOM 1937  CG2 THR B 239     -73.189  69.894  33.243  1.00 80.42      B    C
ATOM 1938  C   THR B 239     -70.128  67.678  33.911  1.00 50.34      B    C
ATOM 1939  O   THR B 239     -69.542  67.718  34.992  1.00 50.34      B    O
ATOM 1940  N   LEU B 240     -69.531  67.330  32.777  1.00 46.13      B    N
ATOM 1941  CA  LEU B 240     -68.120  66.963  32.725  1.00 46.13      B    C
ATOM 1942  CB  LEU B 240     -67.240  68.214  32.824  1.00 56.42      B    C
ATOM 1943  CG  LEU B 240     -67.263  69.219  31.667  1.00 56.42      B    C
ATOM 1944  CD1 LEU B 240     -66.880  68.533  30.361  1.00 56.42      B    C
ATOM 1945  CD2 LEU B 240     -68.640  69.824  31.561  1.00 56.42      B    C
ATOM 1946  C   LEU B 240     -67.711  65.969  33.812  1.00 46.13      B    C
ATOM 1947  O   LEU B 240     -66.693  66.146  34.478  1.00 46.13      B    O
ATOM 1948  N   PRO B 241     -68.500  64.905  34.005  1.00 61.57      B    N
ATOM 1949  CD  PRO B 241     -69.584  64.351  33.177  1.00 51.16      B    C
ATOM 1950  CA  PRO B 241     -68.104  63.954  35.040  1.00 57.56      B    C
ATOM 1951  CB  PRO B 241     -69.149  62.853  34.902  1.00 51.16      B    C
ATOM 1952  CG  PRO B 241     -69.458  62.875  33.446  1.00 51.16      B    C
ATOM 1953  C   PRO B 241     -66.685  63.472  34.754  1.00 55.15      B    C
ATOM 1954  O   PRO B 241     -66.384  63.011  33.649  1.00 56.19      B    O
ATOM 1955  N   ASN B 242     -65.815  63.587  35.751  1.00 43.74      B    N
ATOM 1956  CA  ASN B 242     -64.431  63.184  35.572  1.00 40.51      B    C
ATOM 1957  CB  ASN B 242     -63.683  64.328  34.876  1.00 52.15      B    C
ATOM 1958  CG  ASN B 242     -62.728  63.846  33.809  1.00 52.15      B    C
ATOM 1959  OD1 ASN B 242     -62.238  64.634  32.996  1.00 52.15      B    O
ATOM 1960  ND2 ASN B 242     -62.450  62.548  33.806  1.00 52.15      B    N
ATOM 1961  C   ASN B 242     -63.765  62.835  36.904  1.00 38.07      B    C
ATOM 1962  O   ASN B 242     -62.989  63.627  37.428  1.00 38.20      B    O
ATOM 1963  N   ASN B 243     -64.065  61.651  37.442  1.00 39.01      B    N
ATOM 1964  CA  ASN B 243     -63.485  61.193  38.718  1.00 36.32      B    C
ATOM 1965  CB  ASN B 243     -64.559  61.125  39.800  1.00 35.95      B    C
ATOM 1966  CG  ASN B 243     -64.853  62.461  40.421  1.00 35.95      B    C
ATOM 1967  OD1 ASN B 243     -65.999  62.750  40.760  1.00 35.95      B    O
ATOM 1968  ND2 ASN B 243     -63.825  63.278  40.599  1.00 35.95      B    N
ATOM 1969  C   ASN B 243     -62.806  59.820  38.670  1.00 33.45      B    C
ATOM 1970  O   ASN B 243     -63.395  58.840  38.214  1.00 33.37      B    O
ATOM 1971  N   SER B 244     -61.566  59.750  39.148  1.00 25.99      B    N
ATOM 1972  CA  SER B 244     -60.842  58.474  39.196  1.00 25.99      B    C
ATOM 1973  CB  SER B 244     -59.347  58.649  38.886  1.00 32.86      B    C
ATOM 1974  OG  SER B 244     -58.691  59.431  39.870  1.00 32.86      B    O
ATOM 1975  C   SER B 244     -61.012  57.966  40.617  1.00 29.73      B    C
ATOM 1976  O   SER B 244     -61.149  58.751  41.545  1.00 35.05      B    O
ATOM 1977  N   CYS B 245     -61.012  56.655  40.788  1.00 21.08      B    N
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Figure 8-31

ATOM	1978	CA	CYS	B	245	-61.195	56.073	42.111	1.00	19.33	B C
ATOM	1979	C	CYS	B	245	-60.186	54.951	42.311	1.00	19.89	B C
ATOM	1980	O	CYS	B	245	-60.081	54.059	41.472	1.00	17.85	B O
ATOM	1981	CB	CYS	B	245	-62.613	55.516	42.227	1.00	42.44	B C
ATOM	1982	SG	CYS	B	245	-63.162	55.390	43.946	1.00	42.44	B S
ATOM	1983	N	TYR	B	246	-59.447	54.992	43.413	1.00	21.79	B N
ATOM	1984	CA	TYR	B	246	-58.438	53.966	43.689	1.00	18.51	B C
ATOM	1985	CB	TYR	B	246	-57.021	54.575	43.631	1.00	25.70	B C
ATOM	1986	CG	TYR	B	246	-55.897	53.680	44.152	1.00	25.70	B C
ATOM	1987	CD1	TYR	B	246	-54.932	53.151	43.287	1.00	25.70	B C
ATOM	1988	CE1	TYR	B	246	-53.874	52.354	43.774	1.00	25.70	B C
ATOM	1989	CD2	TYR	B	246	-55.782	53.388	45.517	1.00	25.70	B C
ATOM	1990	CE2	TYR	B	246	-54.741	52.599	46.007	1.00	25.70	B C
ATOM	1991	CZ	TYR	B	246	-53.790	52.089	45.136	1.00	25.70	B C
ATOM	1992	OH	TYR	B	246	-52.742	51.351	45.642	1.00	25.70	B O
ATOM	1993	C	TYR	B	246	-58.645	53.331	45.048	1.00	17.24	B C
ATOM	1994	O	TYR	B	246	-58.946	54.017	46.007	1.00	16.42	B O
ATOM	1995	N	SER	B	247	-58.474	52.021	45.137	1.00	32.74	B N
ATOM	1996	CA	SER	B	247	-58.626	51.345	46.414	1.00	31.44	B C
ATOM	1997	CB	SER	B	247	-60.075	50.926	46.657	1.00	25.30	B C
ATOM	1998	OG	SER	B	247	-60.209	50.378	47.951	1.00	25.30	B O
ATOM	1999	C	SER	B	247	-57.739	50.129	46.392	1.00	30.66	B C
ATOM	2000	O	SER	B	247	-57.523	49.526	45.331	1.00	28.09	B O
ATOM	2001	N	ALA	B	248	-57.215	49.776	47.559	1.00	20.91	B N
ATOM	2002	CA	ALA	B	248	-56.337	48.632	47.654	1.00	21.24	B C
ATOM	2003	CB	ALA	B	248	-54.914	49.062	47.375	1.00	1.00	B C
ATOM	2004	C	ALA	B	248	-56.431	47.989	49.022	1.00	19.95	B C
ATOM	2005	O	ALA	B	248	-56.850	48.615	49.993	1.00	16.62	B O
ATOM	2006	N	GLY	B	249	-56.039	46.728	49.098	1.00	23.95	B N
ATOM	2007	CA	GLY	B	249	-56.071	46.045	50.370	1.00	16.17	B C
ATOM	2008	C	GLY	B	249	-55.271	44.761	50.316	1.00	20.40	B C
ATOM	2009	O	GLY	B	249	-54.789	44.362	49.258	1.00	18.22	B O
ATOM	2010	N	ILE	B	250	-55.120	44.113	51.460	1.00	19.24	B N
ATOM	2011	CA	ILE	B	250	-54.392	42.867	51.503	1.00	19.24	B C
ATOM	2012	CB	ILE	B	250	-53.355	42.884	52.649	1.00	8.61	B C
ATOM	2013	CG2	ILE	B	250	-52.605	41.555	52.717	1.00	8.61	B C
ATOM	2014	CG1	ILE	B	250	-52.378	44.040	52.414	1.00	8.61	B C
ATOM	2015	CD1	ILE	B	250	-51.194	44.082	53.380	1.00	8.61	B C
ATOM	2016	C	ILE	B	250	-55.405	41.762	51.737	1.00	19.24	B C
ATOM	2017	O	ILE	B	250	-56.379	41.947	52.454	1.00	19.31	B O
ATOM	2018	N	ALA	B	251	-55.190	40.614	51.120	1.00	20.29	B N
ATOM	2019	CA	ALA	B	251	-56.094	39.492	51.312	1.00	21.59	B C
ATOM	2020	CB	ALA	B	251	-57.283	39.605	50.372	1.00	1.00	B C
ATOM	2021	C	ALA	B	251	-55.348	38.193	51.061	1.00	24.80	B C
ATOM	2022	O	ALA	B	251	-54.428	38.150	50.239	1.00	24.33	B O
ATOM	2023	N	LYS	B	252	-55.723	37.139	51.777	1.00	25.51	B N
ATOM	2024	CA	LYS	B	252	-55.081	35.853	51.574	1.00	25.66	B C
ATOM	2025	CB	LYS	B	252	-55.019	35.068	52.872	1.00	37.39	B C
ATOM	2026	CG	LYS	B	252	-54.295	33.747	52.740	1.00	37.87	B C
ATOM	2027	CD	LYS	B	252	-53.899	33.228	54.112	1.00	37.87	B C
ATOM	2028	CE	LYS	B	252	-53.228	31.869	54.045	1.00	37.87	B C
ATOM	2029	NZ	LYS	B	252	-54.172	30.803	53.585	1.00	37.87	B N
ATOM	2030	C	LYS	B	252	-55.897	35.100	50.539	1.00	26.28	B C
ATOM	2031	O	LYS	B	252	-57.094	34.879	50.724	1.00	29.16	B O
ATOM	2032	N	LEU	B	253	-55.251	34.740	49.435	1.00	30.70	B N
ATOM	2033	CA	LEU	B	253	-55.908	34.016	48.349	1.00	30.43	B C
ATOM	2034	CB	LEU	B	253	-55.644	34.715	47.014	1.00	23.65	B C
ATOM	2035	CG	LEU	B	253	-56.354	36.011	46.621	1.00	25.19	B C
ATOM	2036	CD1	LEU	B	253	-57.032	36.641	47.813	1.00	19.99	B C
ATOM	2037	CD2	LEU	B	253	-55.329	36.955	45.978	1.00	21.49	B C
ATOM	2038	C	LEU	B	253	-55.379	32.593	48.270	1.00	31.79	B C
ATOM	2039	O	LEU	B	253	-54.234	32.325	48.652	1.00	29.37	B O
ATOM	2040	N	GLU	B	254	-56.218	31.680	47.786	1.00	21.09	B N
ATOM	2041	CA	GLU	B	254	-55.820	30.282	47.622	1.00	22.76	B C
ATOM	2042	CB	GLU	B	254	-56.922	29.347	48.082	1.00	97.56	B C
ATOM	2043	CG	GLU	B	254	-57.109	29.285	49.555	1.00	66.85	B C

Figure 8-32

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ATOM 2044  CD  GLU B 254     -57.996  28.129  49.944  1.00 66.85      B    C
ATOM 2045  OE1 GLU B 254     -57.606  26.970  49.678  1.00 66.85      B    O
ATOM 2046  OE2 GLU B 254     -59.087  28.371  50.506  1.00 66.85      B    O
ATOM 2047  C   GLU B 254     -55.538  29.990  46.154  1.00 23.55      B    C
ATOM 2048  O   GLU B 254     -56.164  30.583  45.259  1.00 23.27      B    O
ATOM 2049  N   GLU B 255     -54.594  29.083  45.902  1.00 23.97      B    N
ATOM 2050  CA  GLU B 255     -54.280  28.707  44.527  1.00 22.87      B    C
ATOM 2051  CB  GLU B 255     -53.312  27.534  44.481  1.00 64.85      B    C
ATOM 2052  CG  GLU B 255     -53.148  26.976  43.085  1.00 64.85      B    C
ATOM 2053  CD  GLU B 255     -52.226  25.786  43.039  1.00 64.85      B    C
ATOM 2054  OE1 GLU B 255     -52.024  25.241  41.932  1.00 64.85      B    O
ATOM 2055  OE2 GLU B 255     -51.704  25.399  44.107  1.00 64.85      B    O
ATOM 2056  C   GLU B 255     -55.584  28.294  43.857  1.00 25.32      B    C
ATOM 2057  O   GLU B 255     -56.332  27.470  44.386  1.00 28.55      B    O
ATOM 2058  N   GLY B 256     -55.857  28.879  42.696  1.00 29.36      B    N
ATOM 2059  CA  GLY B 256     -57.076  28.557  41.991  1.00 29.36      B    C
ATOM 2060  C   GLY B 256     -58.027  29.726  42.005  1.00 29.36      B    C
ATOM 2061  O   GLY B 256     -58.888  29.831  41.127  1.00 29.36      B    O
ATOM 2062  N   ASP B 257     -57.887  30.600  43.001  1.00 37.29      B    N
ATOM 2063  CA  ASP B 257     -58.746  31.775  43.100  1.00 40.57      B    C
ATOM 2064  CB  ASP B 257     -58.492  32.539  44.401  1.00 37.64      B    C
ATOM 2065  CG  ASP B 257     -59.031  31.831  45.614  1.00 37.64      B    C
ATOM 2066  OD1 ASP B 257     -59.956  31.005  45.461  1.00 37.64      B    O
ATOM 2067  OD2 ASP B 257     -58.536  32.120  46.726  1.00 37.64      B    O
ATOM 2068  C   ASP B 257     -58.503  32.733  41.940  1.00 40.36      B    C
ATOM 2069  O   ASP B 257     -57.435  32.724  41.318  1.00 44.82      B    O
ATOM 2070  N   GLU B 258     -59.504  33.558  41.661  1.00 25.60      B    N
ATOM 2071  CA  GLU B 258     -59.414  34.554  40.609  1.00 22.26      B    C
ATOM 2072  CB  GLU B 258     -60.308  34.169  39.430  1.00 47.46      B    C
ATOM 2073  CG  GLU B 258     -59.783  33.026  38.582  1.00 47.46      B    C
ATOM 2074  CD  GLU B 258     -60.707  32.695  37.410  1.00 47.46      B    C
ATOM 2075  OE1 GLU B 258     -60.296  31.922  36.513  1.00 47.46      B    O
ATOM 2076  OE2 GLU B 258     -61.851  33.200  37.386  1.00 47.46      B    O
ATOM 2077  C   GLU B 258     -59.847  35.909  41.172  1.00 20.97      B    C
ATOM 2078  O   GLU B 258     -60.700  35.986  42.059  1.00 20.97      B    O
ATOM 2079  N   LEU B 259     -59.237  36.974  40.675  1.00 42.91      B    N
ATOM 2080  CA  LEU B 259     -59.594  38.317  41.102  1.00 39.38      B    C
ATOM 2081  CB  LEU B 259     -58.369  39.055  41.636  1.00 25.22      B    C
ATOM 2082  CG  LEU B 259     -57.653  38.507  42.878  1.00 25.22      B    C
ATOM 2083  CD1 LEU B 259     -56.339  39.269  43.077  1.00 25.22      B    C
ATOM 2084  CD2 LEU B 259     -58.540  38.639  44.109  1.00 25.22      B    C
ATOM 2085  C   LEU B 259     -60.113  39.010  39.844  1.00 36.72      B    C
ATOM 2086  O   LEU B 259     -59.555  38.828  38.764  1.00 40.80      B    O
ATOM 2087  N   GLN B 260     -61.185  39.784  39.970  1.00 21.61      B    N
ATOM 2088  CA  GLN B 260     -61.747  40.485  38.825  1.00 20.37      B    C
ATOM 2089  CB  GLN B 260     -62.940  39.707  38.265  1.00 40.96      B    C
ATOM 2090  CG  GLN B 260     -64.217  39.867  39.091  1.00 40.96      B    C
ATOM 2091  CD  GLN B 260     -65.360  38.995  38.610  1.00 40.96      B    C
ATOM 2092  OE1 GLN B 260     -66.509  39.197  39.006  1.00 40.96      B    O
ATOM 2093  NE2 GLN B 260     -65.051  38.008  37.766  1.00 40.96      B    N
ATOM 2094  C   GLN B 260     -62.210  41.859  39.293  1.00 20.36      B    C
ATOM 2095  O   GLN B 260     -62.566  42.028  40.454  1.00 17.89      B    O
ATOM 2096  N   LEU B 261     -62.212  42.842  38.400  1.00 30.28      B    N
ATOM 2097  CA  LEU B 261     -62.655  44.187  38.760  1.00 30.59      B    C
ATOM 2098  CB  LEU B 261     -61.623  45.218  38.307  1.00 23.26      B    C
ATOM 2099  CG  LEU B 261     -61.826  46.633  38.839  1.00 23.26      B    C
ATOM 2100  CD1 LEU B 261     -60.511  47.374  38.775  1.00 23.26      B    C
ATOM 2101  CD2 LEU B 261     -62.898  47.355  38.039  1.00 23.26      B    C
ATOM 2102  C   LEU B 261     -63.989  44.418  38.070  1.00 34.26      B    C
ATOM 2103  O   LEU B 261     -64.070  44.386  36.846  1.00 34.93      B    O
ATOM 2104  N   ALA B 262     -65.038  44.652  38.851  1.00 27.20      B    N
ATOM 2105  CA  ALA B 262     -66.365  44.835  38.279  1.00 29.60      B    C
ATOM 2106  CB  ALA B 262     -67.262  43.681  38.703  1.00 50.07      B    C
ATOM 2107  C   ALA B 262     -67.035  46.148  38.631  1.00 28.90      B    C
ATOM 2108  O   ALA B 262     -66.950  46.616  39.765  1.00 28.93      B    O
ATOM 2109  N   ILE B 263     -67.714  46.727  37.646  1.00 26.82      B    N
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Figure 8-33

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ATOM 2110  CA  ILE B 263     -68.447  47.979  37.825  1.00 25.86      B    C
ATOM 2111  CB  ILE B 263     -68.133  48.975  36.692  1.00 26.53      B    C
ATOM 2112  CG2 ILE B 263     -68.959  50.242  36.867  1.00 26.53      B    C
ATOM 2113  CG1 ILE B 263     -66.634  49.295  36.696  1.00 26.53      B    C
ATOM 2114  CD1 ILE B 263     -66.158  50.057  35.486  1.00 26.53      B    C
ATOM 2115  C   ILE B 263     -69.944  47.652  37.816  1.00 24.18      B    C
ATOM 2116  O   ILE B 263     -70.489  47.222  36.800  1.00 23.93      B    O
ATOM 2117  N   PRO B 264     -70.623  47.854  38.954  1.00 31.79      B    N
ATOM 2118  CD  PRO B 264     -70.029  48.345  40.201  1.00 29.61      B    C
ATOM 2119  CA  PRO B 264     -72.054  47.591  39.148  1.00 31.79      B    C
ATOM 2120  CB  PRO B 264     -72.230  47.720  40.663  1.00 29.61      B    C
ATOM 2121  CG  PRO B 264     -70.834  47.596  41.207  1.00 29.61      B    C
ATOM 2122  C   PRO B 264     -72.959  48.563  38.405  1.00 31.79      B    C
ATOM 2123  O   PRO B 264     -73.786  49.248  39.016  1.00 31.79      B    O
ATOM 2124  N   ARG B 265     -72.826  48.604  37.089  1.00 22.66      B    N
ATOM 2125  CA  ARG B 265     -73.610  49.526  36.287  1.00 22.66      B    C
ATOM 2126  CB  ARG B 265     -72.950  50.907  36.346  1.00 54.01      B    C
ATOM 2127  CG  ARG B 265     -73.570  51.955  35.478  1.00 54.01      B    C
ATOM 2128  CD  ARG B 265     -74.798  52.536  36.114  1.00 54.01      B    C
ATOM 2129  NE  ARG B 265     -75.416  53.513  35.225  1.00 54.01      B    N
ATOM 2130  CZ  ARG B 265     -76.506  54.208  35.526  1.00 54.01      B    C
ATOM 2131  NH1 ARG B 265     -77.099  54.033  36.702  1.00 54.01      B    N
ATOM 2132  NH2 ARG B 265     -77.001  55.073  34.649  1.00 54.01      B    N
ATOM 2133  C   ARG B 265     -73.648  49.017  34.849  1.00 22.66      B    C
ATOM 2134  O   ARG B 265     -72.651  48.494  34.347  1.00 22.66      B    O
ATOM 2135  N   GLU B 266     -74.795  49.143  34.185  1.00 27.58      B    N
ATOM 2136  CA  GLU B 266     -74.893  48.696  32.800  1.00 27.58      B    C
ATOM 2137  CB  GLU B 266     -76.351  48.460  32.414  1.00 72.05      B    C
ATOM 2138  CG  GLU B 266     -76.902  47.162  32.973  1.00 72.05      B    C
ATOM 2139  CD  GLU B 266     -78.320  46.883  32.525  1.00 72.05      B    C
ATOM 2140  OE1 GLU B 266     -78.589  46.932  31.304  1.00 72.05      B    O
ATOM 2141  OE2 GLU B 266     -79.169  46.606  33.393  1.00 72.05      B    O
ATOM 2142  C   GLU B 266     -74.256  49.776  31.935  1.00 27.58      B    C
ATOM 2143  O   GLU B 266     -74.613  50.941  32.027  1.00 27.58      B    O
ATOM 2144  N   ASN B 267     -73.288  49.392  31.117  1.00 39.64      B    N
ATOM 2145  CA  ASN B 267     -72.597  50.350  30.271  1.00 39.64      B    C
ATOM 2146  CB  ASN B 267     -73.539  50.890  29.200  1.00 70.00      B    C
ATOM 2147  CG  ASN B 267     -74.068  49.791  28.302  1.00 70.00      B    C
ATOM 2148  OD1 ASN B 267     -74.974  49.048  28.680  1.00 70.00      B    O
ATOM 2149  ND2 ASN B 267     -73.485  49.662  27.114  1.00 70.00      B    N
ATOM 2150  C   ASN B 267     -72.069  51.472  31.146  1.00 39.64      B    C
ATOM 2151  O   ASN B 267     -72.508  52.617  31.055  1.00 39.64      B    O
ATOM 2152  N   ALA B 268     -71.111  51.107  31.994  1.00 79.19      B    N
ATOM 2153  CA  ALA B 268     -70.479  52.013  32.943  1.00 79.19      B    C
ATOM 2154  CB  ALA B 268     -69.174  51.414  33.428  1.00 92.40      B    C
ATOM 2155  C   ALA B 268     -70.226  53.436  32.477  1.00 79.19      B    C
ATOM 2156  O   ALA B 268     -70.765  54.376  33.059  1.00 79.19      B    O
ATOM 2157  N   GLN B 269     -69.407  53.590  31.439  1.00 35.09      B    N
ATOM 2158  CA  GLN B 269     -69.026  54.910  30.927  1.00 33.02      B    C
ATOM 2159  CB  GLN B 269     -70.105  55.950  31.225  1.00 63.77      B    C
ATOM 2160  CG  GLN B 269     -70.220  57.036  30.192  1.00 56.42      B    C
ATOM 2161  CD  GLN B 269     -70.432  56.462  28.810  1.00 56.42      B    C
ATOM 2162  OE1 GLN B 269     -71.147  55.475  28.642  1.00 56.42      B    O
ATOM 2163  NE2 GLN B 269     -69.814  57.079  27.810  1.00 56.42      B    N
ATOM 2164  C   GLN B 269     -67.745  55.283  31.681  1.00 33.71      B    C
ATOM 2165  O   GLN B 269     -67.732  56.197  32.513  1.00 32.30      B    O
ATOM 2166  N   ILE B 270     -66.671  54.557  31.387  1.00 44.06      B    N
ATOM 2167  CA  ILE B 270     -65.393  54.763  32.051  1.00 42.27      B    C
ATOM 2168  CB  ILE B 270     -64.923  53.438  32.680  1.00 35.61      B    C
ATOM 2169  CG2 ILE B 270     -65.956  52.968  33.706  1.00 39.17      B    C
ATOM 2170  CG1 ILE B 270     -64.741  52.380  31.589  1.00 39.17      B    C
ATOM 2171  CD1 ILE B 270     -64.163  51.084  32.097  1.00 35.61      B    C
ATOM 2172  C   ILE B 270     -64.322  55.329  31.113  1.00 41.91      B    C
ATOM 2173  O   ILE B 270     -64.652  55.851  30.060  1.00 39.89      B    O
ATOM 2174  N   SER B 271     -63.047  55.214  31.473  1.00 42.11      B    N
ATOM 2175  CA  SER B 271     -62.016  55.798  30.636  1.00 42.77      B    C
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Figure 8-34

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ATOM 2176  CB  SER B 271     -61.064  56.623  31.483  1.00 29.75      B    C
ATOM 2177  OG  SER B 271     -60.217  57.390  30.646  1.00 24.51      B    O
ATOM 2178  C   SER B 271     -61.198  54.924  29.706  1.00 40.08      B    C
ATOM 2179  O   SER B 271     -60.823  55.377  28.624  1.00 41.44      B    O
ATOM 2180  N   LEU B 272     -60.902  53.692  30.092  1.00 36.12      B    N
ATOM 2181  CA  LEU B 272     -60.113  52.821  29.207  1.00 34.62      B    C
ATOM 2182  CB  LEU B 272     -60.844  52.563  27.880  1.00 45.91      B    C
ATOM 2183  CG  LEU B 272     -61.990  51.559  27.850  1.00 55.06      B    C
ATOM 2184  CD1 LEU B 272     -61.456  50.191  28.158  1.00 55.06      B    C
ATOM 2185  CD2 LEU B 272     -63.043  51.945  28.858  1.00 55.06      B    C
ATOM 2186  C   LEU B 272     -58.713  53.364  28.895  1.00 40.98      B    C
ATOM 2187  O   LEU B 272     -58.004  52.810  28.060  1.00 39.38      B    O
ATOM 2188  N   ASP B 273     -58.329  54.453  29.553  1.00 34.44      B    N
ATOM 2189  CA  ASP B 273     -57.000  55.036  29.374  1.00 29.61      B    C
ATOM 2190  CB  ASP B 273     -57.038  56.503  29.805  1.00 83.40      B    C
ATOM 2191  CG  ASP B 273     -56.313  57.408  28.846  1.00 83.40      B    C
ATOM 2192  OD1 ASP B 273     -56.610  57.331  27.639  1.00 83.40      B    O
ATOM 2193  OD2 ASP B 273     -55.460  58.198  29.303  1.00 83.40      B    O
ATOM 2194  C   ASP B 273     -56.034  54.222  30.264  1.00 31.27      B    C
ATOM 2195  O   ASP B 273     -56.107  54.287  31.491  1.00 34.60      B    O
ATOM 2196  N   GLY B 274     -55.141  53.458  29.639  1.00 45.96      B    N
ATOM 2197  CA  GLY B 274     -54.211  52.604  30.373  1.00 45.96      B    C
ATOM 2198  C   GLY B 274     -53.497  53.111  31.620  1.00 45.96      B    C
ATOM 2199  O   GLY B 274     -53.078  52.330  32.466  1.00 45.96      B    O
ATOM 2200  N   ASP B 275     -53.376  54.424  31.737  1.00 43.90      B    N
ATOM 2201  CA  ASP B 275     -52.705  55.063  32.860  1.00 43.90      B    C
ATOM 2202  CB  ASP B 275     -51.836  56.209  32.355  1.00 63.82      B    C
ATOM 2203  CG  ASP B 275     -52.655  57.344  31.781  1.00 63.82      B    C
ATOM 2204  OD1 ASP B 275     -53.901  57.213  31.712  1.00 63.82      B    O
ATOM 2205  OD2 ASP B 275     -52.066  58.367  31.383  1.00 63.82      B    O
ATOM 2206  C   ASP B 275     -53.645  55.615  33.921  1.00 43.90      B    C
ATOM 2207  O   ASP B 275     -53.212  56.328  34.816  1.00 43.90      B    O
ATOM 2208  N   VAL B 276     -54.934  55.339  33.812  1.00 23.00      B    N
ATOM 2209  CA  VAL B 276     -55.858  55.840  34.811  1.00 22.11      B    C
ATOM 2210  CB  VAL B 276     -56.640  57.079  34.280  1.00 21.45      B    C
ATOM 2211  CG1 VAL B 276     -57.647  56.680  33.237  1.00 21.45      B    C
ATOM 2212  CG2 VAL B 276     -57.325  57.769  35.418  1.00 21.45      B    C
ATOM 2213  C   VAL B 276     -56.810  54.721  35.247  1.00 20.22      B    C
ATOM 2214  O   VAL B 276     -57.421  54.806  36.305  1.00 20.61      B    O
ATOM 2215  N   THR B 277     -56.912  53.670  34.435  1.00 23.25      B    N
ATOM 2216  CA  THR B 277     -57.754  52.520  34.734  1.00 23.34      B    C
ATOM 2217  CB  THR B 277     -58.925  52.383  33.728  1.00 31.18      B    C
ATOM 2218  OG1 THR B 277     -59.811  53.505  33.860  1.00 31.91      B    O
ATOM 2219  CG2 THR B 277     -59.711  51.100  33.990  1.00 32.61      B    C
ATOM 2220  C   THR B 277     -56.868  51.280  34.664  1.00 21.61      B    C
ATOM 2221  O   THR B 277     -56.576  50.774  33.577  1.00 23.79      B    O
ATOM 2222  N   PHE B 278     -56.437  50.803  35.834  1.00 31.23      B    N
ATOM 2223  CA  PHE B 278     -55.574  49.629  35.926  1.00 25.40      B    C
ATOM 2224  CB  PHE B 278     -54.119  50.059  36.058  1.00 20.67      B    C
ATOM 2225  CG  PHE B 278     -53.904  51.165  37.055  1.00 20.67      B    C
ATOM 2226  CD1 PHE B 278     -53.587  50.882  38.385  1.00 20.67      B    C
ATOM 2227  CD2 PHE B 278     -54.032  52.493  36.668  1.00 20.67      B    C
ATOM 2228  CE1 PHE B 278     -53.402  51.911  39.313  1.00 20.67      B    C
ATOM 2229  CE2 PHE B 278     -53.853  53.521  37.581  1.00 20.67      B    C
ATOM 2230  CZ  PHE B 278     -53.537  53.236  38.910  1.00 20.67      B    C
ATOM 2231  C   PHE B 278     -55.969  48.754  37.100  1.00 27.86      B    C
ATOM 2232  O   PHE B 278     -56.672  49.190  38.001  1.00 33.02      B    O
ATOM 2233  N   PHE B 279     -55.488  47.519  37.082  1.00 29.21      B    N
ATOM 2234  CA  PHE B 279     -55.813  46.529  38.090  1.00 28.61      B    C
ATOM 2235  CB  PHE B 279     -56.952  45.684  37.519  1.00 42.80      B    C
ATOM 2236  CG  PHE B 279     -57.458  44.629  38.432  1.00 39.87      B    C
ATOM 2237  CD1 PHE B 279     -57.555  44.854  39.794  1.00 42.35      B    C
ATOM 2238  CD2 PHE B 279     -57.890  43.408  37.914  1.00 37.27      B    C
ATOM 2239  CE1 PHE B 279     -58.079  43.875  40.631  1.00 42.64      B    C
ATOM 2240  CE2 PHE B 279     -58.415  42.423  38.736  1.00 38.01      B    C
ATOM 2241  CZ  PHE B 279     -58.512  42.653  40.096  1.00 40.42      B    C
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Figure 8-35

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ATOM 2242  C   PHE B 279     -54.538  45.718  38.331  1.00 32.59      B    C
ATOM 2243  O   PHE B 279     -53.845  45.365  37.382  1.00 30.10      B    O
ATOM 2244  N   GLY B 280     -54.209  45.439  39.588  1.00 27.23      B    N
ATOM 2245  CA  GLY B 280     -52.990  44.692  39.859  1.00 27.92      B    C
ATOM 2246  C   GLY B 280     -52.910  43.973  41.197  1.00 27.80      B    C
ATOM 2247  O   GLY B 280     -53.672  44.246  42.131  1.00 27.47      B    O
ATOM 2248  N   ALA B 281     -51.968  43.043  41.289  1.00 20.10      B    N
ATOM 2249  CA  ALA B 281     -51.776  42.269  42.505  1.00 20.10      B    C
ATOM 2250  CB  ALA B 281     -52.513  40.940  42.405  1.00 32.08      B    C
ATOM 2251  C   ALA B 281     -50.295  42.029  42.724  1.00 20.10      B    C
ATOM 2252  O   ALA B 281     -49.559  41.716  41.788  1.00 20.10      B    O
ATOM 2253  N   LEU B 282     -49.871  42.182  43.971  1.00 33.69      B    N
ATOM 2254  CA  LEU B 282     -48.477  42.003  44.358  1.00 31.58      B    C
ATOM 2255  CB  LEU B 282     -47.907  43.334  44.849  1.00 43.21      B    C
ATOM 2256  CG  LEU B 282     -46.411  43.481  45.090  1.00 47.21      B    C
ATOM 2257  CD1 LEU B 282     -46.190  44.844  45.694  1.00 43.64      B    C
ATOM 2258  CD2 LEU B 282     -45.884  42.418  46.032  1.00 49.11      B    C
ATOM 2259  C   LEU B 282     -48.445  40.980  45.488  1.00 32.45      B    C
ATOM 2260  O   LEU B 282     -49.177  41.113  46.475  1.00 31.78      B    O
ATOM 2261  N   LYS B 283     -47.603  39.958  45.350  1.00 26.07      B    N
ATOM 2262  CA  LYS B 283     -47.518  38.946  46.390  1.00 27.58      B    C
ATOM 2263  CB  LYS B 283     -47.065  37.599  45.835  1.00 36.64      B    C
ATOM 2264  CG  LYS B 283     -47.129  36.526  46.904  1.00 40.31      B    C
ATOM 2265  CD  LYS B 283     -46.774  35.160  46.386  1.00 35.16      B    C
ATOM 2266  CE  LYS B 283     -46.968  34.131  47.485  1.00 34.56      B    C
ATOM 2267  NZ  LYS B 283     -46.581  32.777  47.031  1.00 36.48      B    N
ATOM 2268  C   LYS B 283     -46.585  39.349  47.512  1.00 30.61      B    C
ATOM 2269  O   LYS B 283     -45.402  39.568  47.295  1.00 29.68      B    O
ATOM 2270  N   LEU B 284     -47.138  39.446  48.714  1.00 25.62      B    N
ATOM 2271  CA  LEU B 284     -46.365  39.813  49.882  1.00 28.97      B    C
ATOM 2272  CB  LEU B 284     -47.295  40.079  51.065  1.00 21.48      B    C
ATOM 2273  CG  LEU B 284     -48.196  41.281  50.822  1.00 18.77      B    C
ATOM 2274  CD1 LEU B 284     -49.111  41.526  52.021  1.00 16.71      B    C
ATOM 2275  CD2 LEU B 284     -47.311  42.482  50.550  1.00 20.15      B    C
ATOM 2276  C   LEU B 284     -45.424  38.675  50.208  1.00 31.64      B    C
ATOM 2277  O   LEU B 284     -45.818  37.506  50.198  1.00 33.43      B    O
ATOM 2278  N   LEU B 285     -44.177  39.025  50.487  1.00 54.05      B    N
ATOM 2279  CA  LEU B 285     -43.175  38.035  50.824  1.00 54.05      B    C
ATOM 2280  CB  LEU B 285     -41.810  38.699  50.943  1.00 53.28      B    C
ATOM 2281  CG  LEU B 285     -40.659  37.765  50.582  1.00 53.28      B    C
ATOM 2282  CD1 LEU B 285     -40.691  37.484  49.085  1.00 53.28      B    C
ATOM 2283  CD2 LEU B 285     -39.347  38.406  50.962  1.00 53.28      B    C
ATOM 2284  C   LEU B 285     -43.535  37.348  52.140  1.00 54.05      B    C
ATOM 2285  O   LEU B 285     -43.332  36.122  52.253  1.00 55.51      B    O
ATOM 2286  OXT LEU B 285     -44.010  38.047  53.053  1.00 39.14      B    O
ATOM 2287  CB  VAL C 142     -32.345  40.951  52.613  1.00 89.46      C    C
ATOM 2288  CG1 VAL C 142     -31.892  39.731  51.835  1.00 89.46      C    C
ATOM 2289  CG2 VAL C 142     -31.146  41.681  53.220  1.00 89.46      C    C
ATOM 2290  C   VAL C 142     -33.783  42.961  52.561  1.00 91.37      C    C
ATOM 2291  O   VAL C 142     -34.506  42.631  53.496  1.00 91.37      C    O
ATOM 2292  N   VAL C 142     -32.244  42.505  50.647  1.00 91.37      C    N
ATOM 2293  CA  VAL C 142     -33.130  41.903  51.685  1.00 91.37      C    C
ATOM 2294  N   THR C 143     -33.539  44.230  52.257  1.00 87.34      C    N
ATOM 2295  CA  THR C 143     -34.104  45.303  53.058  1.00 87.34      C    C
ATOM 2296  CB  THR C 143     -33.019  46.284  53.503  1.00 79.63      C    C
ATOM 2297  OG1 THR C 143     -32.264  46.702  52.361  1.00 79.63      C    O
ATOM 2298  CG2 THR C 143     -32.097  45.632  54.514  1.00 79.63      C    C
ATOM 2299  C   THR C 143     -35.215  46.104  52.399  1.00 87.34      C    C
ATOM 2300  O   THR C 143     -35.860  46.910  53.062  1.00 87.34      C    O
ATOM 2301  N   GLN C 144     -35.435  45.914  51.102  1.00 50.23      C    N
ATOM 2302  CA  GLN C 144     -36.510  46.637  50.414  1.00 40.85      C    C
ATOM 2303  CB  GLN C 144     -37.863  46.147  50.947  1.00 87.51      C    C
ATOM 2304  CG  GLN C 144     -38.991  46.196  49.943  1.00 87.51      C    C
ATOM 2305  CD  GLN C 144     -40.252  45.523  50.445  1.00 87.51      C    C
ATOM 2306  OE1 GLN C 144     -41.180  45.270  49.674  1.00 34.72      C    O
ATOM 2307  NE2 GLN C 144     -40.296  45.232  51.743  1.00 34.72      C    N
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Figure 8-36

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ATOM 2308  C   GLN C 144     -36.402  48.165  50.590  1.00 38.04      C   C
ATOM 2309  O   GLN C 144     -37.059  48.747  51.454  1.00 33.12      C   O
ATOM 2310  N   ASP C 145     -35.584  48.813  49.763  1.00 26.42      C   N
ATOM 2311  CA  ASP C 145     -35.397  50.259  49.867  1.00 26.13      C   C
ATOM 2312  CB  ASP C 145     -34.300  50.752  48.909  1.00 54.57      C   C
ATOM 2313  CG  ASP C 145     -32.990  50.009  49.063  1.00 72.48      C   C
ATOM 2314  OD1 ASP C 145     -32.560  49.775  50.210  1.00 72.48      C   O
ATOM 2315  OD2 ASP C 145     -32.377  49.677  48.025  1.00 72.48      C   O
ATOM 2316  C   ASP C 145     -36.672  51.031  49.551  1.00 24.17      C   C
ATOM 2317  O   ASP C 145     -37.569  50.521  48.874  1.00 23.14      C   O
ATOM 2318  N   CYS C 146     -36.727  52.272  50.029  1.00 16.42      C   N
ATOM 2319  CA  CYS C 146     -37.867  53.146  49.785  1.00 15.99      C   C
ATOM 2320  CB  CYS C 146     -39.100  52.649  50.536  1.00 24.26      C   C
ATOM 2321  SG  CYS C 146     -38.841  52.437  52.307  1.00 35.58      C   S
ATOM 2322  C   CYS C 146     -37.558  54.581  50.206  1.00 17.36      C   C
ATOM 2323  O   CYS C 146     -36.783  54.822  51.137  1.00 15.28      C   O
ATOM 2324  N   LEU C 147     -38.172  55.532  49.512  1.00 29.72      C   N
ATOM 2325  CA  LEU C 147     -37.953  56.938  49.795  1.00 29.72      C   C
ATOM 2326  CB  LEU C 147     -36.957  57.528  48.792  1.00 21.39      C   C
ATOM 2327  CG  LEU C 147     -36.707  59.032  48.898  1.00 21.39      C   C
ATOM 2328  CD1 LEU C 147     -35.350  59.336  48.299  1.00 25.92      C   C
ATOM 2329  CD2 LEU C 147     -37.821  59.814  48.201  1.00 25.92      C   C
ATOM 2330  C   LEU C 147     -39.278  57.653  49.693  1.00 29.72      C   C
ATOM 2331  O   LEU C 147     -40.078  57.361  48.804  1.00 30.88      C   O
ATOM 2332  N   GLN C 148     -39.500  58.606  50.589  1.00 38.35      C   N
ATOM 2333  CA  GLN C 148     -40.756  59.340  50.609  1.00 38.37      C   C
ATOM 2334  CB  GLN C 148     -41.626  58.819  51.756  1.00 23.96      C   C
ATOM 2335  CG  GLN C 148     -43.012  59.429  51.863  1.00 31.42      C   C
ATOM 2336  CD  GLN C 148     -43.873  58.686  52.871  1.00 31.42      C   C
ATOM 2337  OE1 GLN C 148     -44.630  57.775  52.516  1.00 31.42      C   O
ATOM 2338  NE2 GLN C 148     -43.742  59.053  54.141  1.00 31.42      C   N
ATOM 2339  C   GLN C 148     -40.566  60.835  50.746  1.00 39.49      C   C
ATOM 2340  O   GLN C 148     -39.755  61.302  51.539  1.00 40.00      C   O
ATOM 2341  N   LEU C 149     -41.331  61.576  49.961  1.00 36.03      C   N
ATOM 2342  CA  LEU C 149     -41.296  63.026  49.981  1.00 34.76      C   C
ATOM 2343  CB  LEU C 149     -41.058  63.558  48.565  1.00 32.70      C   C
ATOM 2344  CG  LEU C 149     -39.652  63.726  47.980  1.00 32.70      C   C
ATOM 2345  CD1 LEU C 149     -38.618  63.011  48.822  1.00 32.70      C   C
ATOM 2346  CD2 LEU C 149     -39.653  63.205  46.548  1.00 20.00      C   C
ATOM 2347  C   LEU C 149     -42.633  63.563  50.505  1.00 36.41      C   C
ATOM 2348  O   LEU C 149     -43.686  62.964  50.281  1.00 36.80      C   O
ATOM 2349  N   ILE C 150     -42.590  64.686  51.211  1.00 17.23      C   N
ATOM 2350  CA  ILE C 150     -43.809  65.304  51.721  1.00 16.10      C   C
ATOM 2351  CB  ILE C 150     -43.939  65.137  53.241  1.00 16.93      C   C
ATOM 2352  CG2 ILE C 150     -43.919  63.656  53.598  1.00 16.93      C   C
ATOM 2353  CG1 ILE C 150     -42.809  65.873  53.952  1.00 21.05      C   C
ATOM 2354  CD1 ILE C 150     -42.795  65.625  55.425  1.00 21.05      C   C
ATOM 2355  C   ILE C 150     -43.771  66.783  51.378  1.00 20.20      C   C
ATOM 2356  O   ILE C 150     -42.701  67.391  51.352  1.00 21.25      C   O
ATOM 2357  N   ALA C 151     -44.935  67.358  51.103  1.00 36.86      C   N
ATOM 2358  CA  ALA C 151     -45.019  68.768  50.735  1.00 36.86      C   C
ATOM 2359  CB  ALA C 151     -46.476  69.175  50.573  1.00 46.20      C   C
ATOM 2360  C   ALA C 151     -44.316  69.706  51.718  1.00 36.86      C   C
ATOM 2361  O   ALA C 151     -44.347  69.505  52.935  1.00 36.86      C   O
ATOM 2362  N   ASP C 152     -43.671  70.727  51.169  1.00 56.30      C   N
ATOM 2363  CA  ASP C 152     -42.968  71.717  51.971  1.00 56.30      C   C
ATOM 2364  CB  ASP C 152     -41.656  72.100  51.290  1.00 58.38      C   C
ATOM 2365  CG  ASP C 152     -40.898  73.166  52.047  1.00 58.38      C   C
ATOM 2366  OD1 ASP C 152     -39.896  73.674  51.509  1.00 58.38      C   O
ATOM 2367  OD2 ASP C 152     -41.304  73.492  53.182  1.00 58.38      C   O
ATOM 2368  C   ASP C 152     -43.869  72.948  52.099  1.00 56.30      C   C
ATOM 2369  O   ASP C 152     -43.952  73.773  51.188  1.00 56.30      C   O
ATOM 2370  N   SER C 153     -44.545  73.066  53.235  1.00 50.02      C   N
ATOM 2371  CA  SER C 153     -45.459  74.179  53.470  1.00 50.02      C   C
ATOM 2372  CB  SER C 153     -46.298  73.903  54.714  1.00 43.42      C   C
ATOM 2373  OG  SER C 153     -45.464  73.611  55.820  1.00 43.42      C   O
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Figure 8-37

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ATOM 2374  C   SER C 153     -44.740  75.506  53.636  1.00 50.02      C    C
ATOM 2375  O   SER C 153     -45.372  76.537  53.842  1.00 50.02      C    O
ATOM 2376  N   GLU C 154     -43.418  75.476  53.535  1.00 61.37      C    N
ATOM 2377  CA  GLU C 154     -42.609  76.678  53.695  1.00 61.37      C    C
ATOM 2378  CB  GLU C 154     -41.302  76.314  54.400  1.00 98.51      C    C
ATOM 2379  CG  GLU C 154     -40.858  77.334  55.410  1.00 98.51      C    C
ATOM 2380  CD  GLU C 154     -41.801  77.398  56.585  1.00 98.51      C    C
ATOM 2381  OE1 GLU C 154     -41.847  76.414  57.350  1.00 98.51      C    O
ATOM 2382  OE2 GLU C 154     -42.501  78.420  56.740  1.00 98.51      C    O
ATOM 2383  C   GLU C 154     -42.286  77.367  52.364  1.00 61.37      C    C
ATOM 2384  O   GLU C 154     -42.004  78.563  52.321  1.00 61.37      C    O
ATOM 2385  N   THR C 155     -42.335  76.604  51.280  1.00 52.64      C    N
ATOM 2386  CA  THR C 155     -42.010  77.114  49.955  1.00 52.64      C    C
ATOM 2387  CB  THR C 155     -40.985  76.209  49.291  1.00 42.78      C    C
ATOM 2388  OG1 THR C 155     -39.814  76.157  50.111  1.00 42.78      C    O
ATOM 2389  CG2 THR C 155     -40.637  76.711  47.898  1.00 42.78      C    C
ATOM 2390  C   THR C 155     -43.189  77.215  49.012  1.00 52.64      C    C
ATOM 2391  O   THR C 155     -44.087  76.380  49.030  1.00 52.64      C    O
ATOM 2392  N   PRO C 156     -43.196  78.243  48.158  1.00 43.68      C    N
ATOM 2393  CD  PRO C 156     -42.234  79.353  48.047  1.00 34.97      C    C
ATOM 2394  CA  PRO C 156     -44.292  78.413  47.205  1.00 43.68      C    C
ATOM 2395  CB  PRO C 156     -44.045  79.815  46.656  1.00 34.97      C    C
ATOM 2396  CG  PRO C 156     -42.548  79.911  46.676  1.00 34.97      C    C
ATOM 2397  C   PRO C 156     -44.210  77.335  46.122  1.00 43.68      C    C
ATOM 2398  O   PRO C 156     -43.127  76.820  45.819  1.00 43.68      C    O
ATOM 2399  N   THR C 157     -45.354  76.996  45.544  1.00 50.82      C    N
ATOM 2400  CA  THR C 157     -45.393  75.983  44.500  1.00 50.82      C    C
ATOM 2401  CB  THR C 157     -46.823  75.717  44.040  1.00 62.63      C    C
ATOM 2402  OG1 THR C 157     -47.321  76.860  43.337  1.00 62.63      C    O
ATOM 2403  CG2 THR C 157     -47.707  75.446  45.240  1.00 62.63      C    C
ATOM 2404  C   THR C 157     -44.572  76.438  43.304  1.00 50.82      C    C
ATOM 2405  O   THR C 157     -44.510  77.624  43.001  1.00 50.82      C    O
ATOM 2406  N   ILE C 158     -43.952  75.483  42.623  1.00 50.85      C    N
ATOM 2407  CA  ILE C 158     -43.115  75.770  41.468  1.00 50.85      C    C
ATOM 2408  CB  ILE C 158     -42.033  74.700  41.316  1.00 37.29      C    C
ATOM 2409  CG2 ILE C 158     -41.091  75.068  40.192  1.00 37.29      C    C
ATOM 2410  CG1 ILE C 158     -41.268  74.552  42.627  1.00 37.29      C    C
ATOM 2411  CD1 ILE C 158     -40.243  73.439  42.600  1.00 37.29      C    C
ATOM 2412  C   ILE C 158     -43.891  75.831  40.157  1.00 50.85      C    C
ATOM 2413  O   ILE C 158     -44.642  74.917  39.833  1.00 50.85      C    O
ATOM 2414  N   GLN C 159     -43.693  76.908  39.402  1.00 61.94      C    N
ATOM 2415  CA  GLN C 159     -44.348  77.079  38.107  1.00 61.94      C    C
ATOM 2416  CB  GLN C 159     -44.872  78.495  37.975  1.00 70.81      C    C
ATOM 2417  CG  GLN C 159     -45.881  78.806  39.033  1.00 70.81      C    C
ATOM 2418  CD  GLN C 159     -47.050  77.849  38.989  1.00 70.81      C    C
ATOM 2419  OE1 GLN C 159     -47.676  77.577  40.010  1.00 70.81      C    O
ATOM 2420  NE2 GLN C 159     -47.359  77.340  37.800  1.00 70.81      C    N
ATOM 2421  C   GLN C 159     -43.341  76.798  37.008  1.00 61.94      C    C
ATOM 2422  O   GLN C 159     -42.235  77.331  37.024  1.00 61.94      C    O
ATOM 2423  N   LYS C 160     -43.718  75.964  36.047  1.00 60.32      C    N
ATOM 2424  CA  LYS C 160     -42.790  75.621  34.982  1.00 60.32      C    C
ATOM 2425  CB  LYS C 160     -41.673  74.746  35.559  1.00120.28      C    C
ATOM 2426  CG  LYS C 160     -40.557  74.392  34.601  1.00101.61      C    C
ATOM 2427  CD  LYS C 160     -39.459  73.633  35.334  1.00101.61      C    C
ATOM 2428  CE  LYS C 160     -38.262  73.358  34.435  1.00101.61      C    C
ATOM 2429  NZ  LYS C 160     -37.160  72.678  35.177  1.00101.61      C    N
ATOM 2430  C   LYS C 160     -43.481  74.901  33.830  1.00 60.32      C    C
ATOM 2431  O   LYS C 160     -44.041  73.824  34.008  1.00 60.32      C    O
ATOM 2432  N   GLY C 161     -43.436  75.509  32.651  1.00 77.94      C    N
ATOM 2433  CA  GLY C 161     -44.045  74.905  31.483  1.00 77.94      C    C
ATOM 2434  C   GLY C 161     -45.542  74.700  31.590  1.00 77.94      C    C
ATOM 2435  O   GLY C 161     -46.054  73.649  31.203  1.00 77.94      C    O
ATOM 2436  N   SER C 162     -46.246  75.701  32.112  1.00 76.66      C    N
ATOM 2437  CA  SER C 162     -47.699  75.635  32.262  1.00 76.66      C    C
ATOM 2438  CB  SER C 162     -48.355  75.313  30.916  1.00114.53      C    C
ATOM 2439  OG  SER C 162     -49.769  75.346  31.015  1.00114.53      C    O
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Figure 8-38

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ATOM 2440  C   SER C 162     -48.138  74.612  33.310  1.00 76.66      C    C
ATOM 2441  O   SER C 162     -49.327  74.492  33.609  1.00 76.66      C    O
ATOM 2442  N   TYR C 163     -47.180  73.865  33.852  1.00 61.78      C    N
ATOM 2443  CA  TYR C 163     -47.466  72.881  34.888  1.00 61.78      C    C
ATOM 2444  CB  TYR C 163     -46.587  71.635  34.749  1.00 67.78      C    C
ATOM 2445  CG  TYR C 163     -47.006  70.623  33.709  1.00 67.78      C    C
ATOM 2446  CD1 TYR C 163     -48.275  70.649  33.137  1.00 67.78      C    C
ATOM 2447  CE1 TYR C 163     -48.665  69.685  32.211  1.00 67.78      C    C
ATOM 2448  CD2 TYR C 163     -46.132  69.605  33.329  1.00 67.78      C    C
ATOM 2449  CE2 TYR C 163     -46.506  68.635  32.409  1.00 67.78      C    C
ATOM 2450  CZ  TYR C 163     -47.777  68.678  31.851  1.00 67.78      C    C
ATOM 2451  OH  TYR C 163     -48.153  67.714  30.936  1.00 67.78      C    O
ATOM 2452  C   TYR C 163     -47.130  73.525  36.219  1.00 61.78      C    C
ATOM 2453  O   TYR C 163     -46.578  74.623  36.269  1.00 61.78      C    O
ATOM 2454  N   THR C 164     -47.460  72.828  37.297  1.00 40.85      C    N
ATOM 2455  CA  THR C 164     -47.163  73.295  38.643  1.00 40.85      C    C
ATOM 2456  CB  THR C 164     -48.396  73.956  39.285  1.00 30.43      C    C
ATOM 2457  OG1 THR C 164     -48.159  74.160  40.683  1.00 30.43      C    O
ATOM 2458  CG2 THR C 164     -49.605  73.097  39.095  1.00 30.43      C    C
ATOM 2459  C   THR C 164     -46.680  72.102  39.477  1.00 40.85      C    C
ATOM 2460  O   THR C 164     -47.332  71.058  39.539  1.00 40.85      C    O
ATOM 2461  N   PHE C 165     -45.516  72.264  40.094  1.00 34.27      C    N
ATOM 2462  CA  PHE C 165     -44.916  71.214  40.895  1.00 34.27      C    C
ATOM 2463  CB  PHE C 165     -43.493  70.958  40.410  1.00 29.42      C    C
ATOM 2464  CG  PHE C 165     -43.414  70.658  38.955  1.00 29.42      C    C
ATOM 2465  CD1 PHE C 165     -43.531  71.677  38.021  1.00 29.42      C    C
ATOM 2466  CD2 PHE C 165     -43.286  69.349  38.508  1.00 29.42      C    C
ATOM 2467  CE1 PHE C 165     -43.526  71.400  36.656  1.00 29.42      C    C
ATOM 2468  CE2 PHE C 165     -43.281  69.061  37.150  1.00 29.42      C    C
ATOM 2469  CZ  PHE C 165     -43.402  70.092  36.222  1.00 29.42      C    C
ATOM 2470  C   PHE C 165     -44.893  71.574  42.361  1.00 34.27      C    C
ATOM 2471  O   PHE C 165     -44.695  72.728  42.714  1.00 34.27      C    O
ATOM 2472  N   VAL C 166     -45.088  70.592  43.228  1.00 19.30      C    N
ATOM 2473  CA  VAL C 166     -45.064  70.901  44.646  1.00 19.30      C    C
ATOM 2474  CB  VAL C 166     -45.998  69.954  45.469  1.00 22.25      C    C
ATOM 2475  CG1 VAL C 166     -46.772  69.040  44.527  1.00 22.25      C    C
ATOM 2476  CG2 VAL C 166     -45.198  69.148  46.482  1.00 22.25      C    C
ATOM 2477  C   VAL C 166     -43.632  70.811  45.165  1.00 19.30      C    C
ATOM 2478  O   VAL C 166     -42.837  70.000  44.702  1.00 19.30      C    O
ATOM 2479  N   PRO C 167     -43.285  71.677  46.121  1.00 38.20      C    N
ATOM 2480  CD  PRO C 167     -44.111  72.804  46.570  1.00 27.37      C    C
ATOM 2481  CA  PRO C 167     -41.960  71.732  46.742  1.00 38.20      C    C
ATOM 2482  CB  PRO C 167     -42.004  73.025  47.546  1.00 27.37      C    C
ATOM 2483  CG  PRO C 167     -43.068  73.832  46.871  1.00 27.37      C    C
ATOM 2484  C   PRO C 167     -41.855  70.538  47.669  1.00 38.20      C    C
ATOM 2485  O   PRO C 167     -42.631  70.440  48.621  1.00 38.20      C    O
ATOM 2486  N   TRP C 168     -40.916  69.633  47.410  1.00 27.48      C    N
ATOM 2487  CA  TRP C 168     -40.783  68.462  48.266  1.00 28.71      C    C
ATOM 2488  CB  TRP C 168     -40.450  67.205  47.449  1.00 37.09      C    C
ATOM 2489  CG  TRP C 168     -41.503  66.834  46.474  1.00 31.35      C    C
ATOM 2490  CD2 TRP C 168     -42.863  66.507  46.768  1.00 31.92      C    C
ATOM 2491  CE2 TRP C 168     -43.513  66.282  45.533  1.00 31.31      C    C
ATOM 2492  CE3 TRP C 168     -43.600  66.383  47.957  1.00 33.05      C    C
ATOM 2493  CD1 TRP C 168     -41.381  66.791  45.122  1.00 34.20      C    C
ATOM 2494  NE1 TRP C 168     -42.582  66.464  44.547  1.00 37.18      C    N
ATOM 2495  CZ2 TRP C 168     -44.869  65.941  45.445  1.00 31.07      C    C
ATOM 2496  CZ3 TRP C 168     -44.952  66.044  47.872  1.00 36.81      C    C
ATOM 2497  CH2 TRP C 168     -45.571  65.827  46.621  1.00 35.02      C    C
ATOM 2498  C   TRP C 168     -39.741  68.620  49.356  1.00 29.02      C    C
ATOM 2499  O   TRP C 168     -38.730  69.309  49.198  1.00 30.68      C    O
ATOM 2500  N   LEU C 169     -40.012  67.953  50.466  1.00 38.26      C    N
ATOM 2501  CA  LEU C 169     -39.137  67.942  51.615  1.00 38.73      C    C
ATOM 2502  CB  LEU C 169     -39.849  68.606  52.782  1.00 35.03      C    C
ATOM 2503  CG  LEU C 169     -39.032  69.641  53.532  1.00 35.03      C    C
ATOM 2504  CD1 LEU C 169     -39.964  70.547  54.300  1.00 35.03      C    C
ATOM 2505  CD2 LEU C 169     -38.042  68.927  54.447  1.00 35.03      C    C
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Figure 8-39

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ATOM 2506  C   LEU C 169     -38.942  66.453  51.860  1.00 39.36      C    C
ATOM 2507  O   LEU C 169     -39.906  65.695  51.822  1.00 37.71      C    O
ATOM 2508  N   LEU C 170     -37.711  66.017  52.085  1.00 31.23      C    N
ATOM 2509  CA  LEU C 170     -37.472  64.593  52.299  1.00 31.23      C    C
ATOM 2510  CB  LEU C 170     -35.976  64.279  52.268  1.00 35.58      C    C
ATOM 2511  CG  LEU C 170     -35.700  62.811  52.612  1.00 35.58      C    C
ATOM 2512  CD1 LEU C 170     -36.184  61.911  51.475  1.00 35.58      C    C
ATOM 2513  CD2 LEU C 170     -34.237  62.603  52.848  1.00 35.58      C    C
ATOM 2514  C   LEU C 170     -38.049  64.044  53.597  1.00 31.23      C    C
ATOM 2515  O   LEU C 170     -37.560  64.350  54.683  1.00 31.98      C    O
ATOM 2516  N   SER C 171     -39.086  63.221  53.483  1.00 40.68      C    N
ATOM 2517  CA  SER C 171     -39.693  62.616  54.660  1.00 40.69      C    C
ATOM 2518  CB  SER C 171     -40.950  61.838  54.276  1.00 47.12      C    C
ATOM 2519  OG  SER C 171     -41.339  60.963  55.324  1.00 47.12      C    O
ATOM 2520  C   SER C 171     -38.662  61.661  55.243  1.00 39.08      C    C
ATOM 2521  O   SER C 171     -38.338  61.724  56.422  1.00 38.78      C    O
ATOM 2522  N   PHE C 172     -38.152  60.775  54.398  1.00 41.97      C    N
ATOM 2523  CA  PHE C 172     -37.151  59.816  54.816  1.00 38.49      C    C
ATOM 2524  CB  PHE C 172     -37.748  58.824  55.821  1.00 48.26      C    C
ATOM 2525  CG  PHE C 172     -38.536  57.719  55.185  1.00 26.92      C    C
ATOM 2526  CD1 PHE C 172     -37.889  56.622  54.617  1.00 26.92      C    C
ATOM 2527  CD2 PHE C 172     -39.919  57.794  55.108  1.00 26.92      C    C
ATOM 2528  CE1 PHE C 172     -38.609  55.618  53.973  1.00 26.92      C    C
ATOM 2529  CE2 PHE C 172     -40.651  56.794  54.467  1.00 26.92      C    C
ATOM 2530  CZ  PHE C 172     -39.993  55.703  53.897  1.00 26.92      C    C
ATOM 2531  C   PHE C 172     -36.642  59.073  53.586  1.00 40.03      C    C
ATOM 2532  O   PHE C 172     -37.334  58.955  52.572  1.00 40.82      C    O
ATOM 2533  N   LYS C 173     -35.419  58.581  53.686  1.00 41.12      C    N
ATOM 2534  CA  LYS C 173     -34.783  57.831  52.616  1.00 40.16      C    C
ATOM 2535  CB  LYS C 173     -33.633  58.642  52.018  1.00 31.33      C    C
ATOM 2536  CG  LYS C 173     -32.706  57.877  51.096  1.00 50.33      C    C
ATOM 2537  CD  LYS C 173     -31.529  58.750  50.691  1.00 50.33      C    C
ATOM 2538  CE  LYS C 173     -30.600  58.028  49.732  1.00 50.33      C    C
ATOM 2539  NZ  LYS C 173     -30.067  56.770  50.313  1.00 50.33      C    N
ATOM 2540  C   LYS C 173     -34.248  56.584  53.290  1.00 41.94      C    C
ATOM 2541  O   LYS C 173     -33.596  56.662  54.327  1.00 43.43      C    O
ATOM 2542  N   ARG C 174     -34.533  55.429  52.712  1.00 27.31      C    N
ATOM 2543  CA  ARG C 174     -34.078  54.177  53.290  1.00 27.31      C    C
ATOM 2544  CB  ARG C 174     -35.256  53.452  53.926  1.00 36.88      C    C
ATOM 2545  CG  ARG C 174     -34.886  52.180  54.633  1.00 36.88      C    C
ATOM 2546  CD  ARG C 174     -36.108  51.344  54.927  1.00 36.88      C    C
ATOM 2547  NE  ARG C 174     -35.756  50.137  55.670  1.00 36.88      C    N
ATOM 2548  CZ  ARG C 174     -36.355  48.961  55.508  1.00 36.88      C    C
ATOM 2549  NH1 ARG C 174     -37.341  48.831  54.625  1.00 36.88      C    N
ATOM 2550  NH2 ARG C 174     -35.971  47.915  56.222  1.00 36.88      C    N
ATOM 2551  C   ARG C 174     -33.480  53.304  52.211  1.00 27.31      C    C
ATOM 2552  O   ARG C 174     -34.192  52.824  51.328  1.00 27.31      C    O
ATOM 2553  N   GLY C 175     -32.169  53.111  52.266  1.00 40.27      C    N
ATOM 2554  CA  GLY C 175     -31.523  52.276  51.272  1.00 40.27      C    C
ATOM 2555  C   GLY C 175     -30.726  53.018  50.213  1.00 40.27      C    C
ATOM 2556  O   GLY C 175     -30.685  54.254  50.187  1.00 40.27      C    O
ATOM 2557  N   SER C 176     -30.104  52.234  49.331  1.00 51.51      C    N
ATOM 2558  CA  SER C 176     -29.268  52.737  48.251  1.00 51.51      C    C
ATOM 2559  CB  SER C 176     -28.277  51.657  47.835  1.00 63.49      C    C
ATOM 2560  OG  SER C 176     -28.930  50.409  47.684  1.00 63.49      C    O
ATOM 2561  C   SER C 176     -30.045  53.216  47.033  1.00 51.51      C    C
ATOM 2562  O   SER C 176     -29.850  54.342  46.585  1.00 51.51      C    O
ATOM 2563  N   ALA C 177     -30.909  52.366  46.483  1.00 54.32      C    N
ATOM 2564  CA  ALA C 177     -31.708  52.751  45.322  1.00 54.32      C    C
ATOM 2565  CB  ALA C 177     -32.538  51.598  44.863  1.00 27.46      C    C
ATOM 2566  C   ALA C 177     -32.616  53.873  45.765  1.00 54.32      C    C
ATOM 2567  O   ALA C 177     -32.955  53.967  46.944  1.00 54.32      C    O
ATOM 2568  N   LEU C 178     -33.021  54.730  44.841  1.00 45.55      C    N
ATOM 2569  CA  LEU C 178     -33.903  55.827  45.221  1.00 45.55      C    C
ATOM 2570  CB  LEU C 178     -35.149  55.270  45.901  1.00 46.36      C    C
ATOM 2571  CG  LEU C 178     -36.405  54.968  45.088  1.00 27.43      C    C
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Figure 8-40

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ATOM 2572  CD1 LEU C 178     -36.081  54.535  43.665  1.00 27.43      C    C
ATOM 2573  CD2 LEU C 178     -37.187  53.895  45.834  1.00 27.43      C    C
ATOM 2574  C   LEU C 178     -33.279  56.862  46.159  1.00 45.55      C    C
ATOM 2575  O   LEU C 178     -32.922  56.546  47.295  1.00 45.55      C    O
ATOM 2576  N   GLU C 179     -33.147  58.093  45.673  1.00 25.12      C    N
ATOM 2577  CA  GLU C 179     -32.634  59.202  46.469  1.00 25.12      C    C
ATOM 2578  CB  GLU C 179     -31.103  59.240  46.483  1.00 89.61      C    C
ATOM 2579  CG  GLU C 179     -30.429  59.232  45.140  1.00 38.81      C    C
ATOM 2580  CD  GLU C 179     -28.907  59.086  45.262  1.00 38.81      C    C
ATOM 2581  OE1 GLU C 179     -28.433  58.047  45.783  1.00 38.81      C    O
ATOM 2582  OE2 GLU C 179     -28.182  60.016  44.833  1.00 38.81      C    O
ATOM 2583  C   GLU C 179     -33.231  60.428  45.818  1.00 25.12      C    C
ATOM 2584  O   GLU C 179     -33.639  60.360  44.671  1.00 25.12      C    O
ATOM 2585  N   GLU C 180     -33.332  61.531  46.550  1.00 30.20      C    N
ATOM 2586  CA  GLU C 180     -33.933  62.739  45.998  1.00 30.20      C    C
ATOM 2587  CB  GLU C 180     -34.482  63.605  47.132  1.00 33.27      C    C
ATOM 2588  CG  GLU C 180     -34.938  64.984  46.710  1.00 33.27      C    C
ATOM 2589  CD  GLU C 180     -35.518  65.770  47.869  1.00 33.27      C    C
ATOM 2590  OE1 GLU C 180     -34.986  65.649  48.994  1.00 43.06      C    O
ATOM 2591  OE2 GLU C 180     -36.497  66.521  47.660  1.00 43.06      C    O
ATOM 2592  C   GLU C 180     -32.956  63.538  45.146  1.00 30.20      C    C
ATOM 2593  O   GLU C 180     -31.883  63.925  45.614  1.00 30.20      C    O
ATOM 2594  N   LYS C 181     -33.334  63.782  43.895  1.00 66.48      C    N
ATOM 2595  CA  LYS C 181     -32.489  64.529  42.976  1.00 66.48      C    C
ATOM 2596  CB  LYS C 181     -32.677  64.018  41.550  1.00 72.09      C    C
ATOM 2597  CG  LYS C 181     -31.791  64.689  40.506  1.00 72.09      C    C
ATOM 2598  CD  LYS C 181     -30.345  64.274  40.642  1.00 72.09      C    C
ATOM 2599  CE  LYS C 181     -29.534  64.728  39.441  1.00 72.09      C    C
ATOM 2600  NZ  LYS C 181     -28.178  64.111  39.434  1.00 72.09      C    N
ATOM 2601  C   LYS C 181     -32.818  66.009  43.030  1.00 66.48      C    C
ATOM 2602  O   LYS C 181     -32.493  66.693  44.002  1.00 66.48      C    O
ATOM 2603  N   GLU C 182     -33.479  66.506  41.994  1.00 27.59      C    N
ATOM 2604  CA  GLU C 182     -33.805  67.913  41.949  1.00 27.59      C    C
ATOM 2605  CB  GLU C 182     -33.339  68.522  40.628  1.00 98.04      C    C
ATOM 2606  CG  GLU C 182     -31.898  68.194  40.298  1.00 98.04      C    C
ATOM 2607  CD  GLU C 182     -31.453  68.796  38.991  1.00 98.04      C    C
ATOM 2608  OE1 GLU C 182     -31.258  70.026  38.947  1.00 98.04      C    O
ATOM 2609  OE2 GLU C 182     -31.309  68.039  38.007  1.00 98.04      C    O
ATOM 2610  C   GLU C 182     -35.293  68.045  42.099  1.00 27.59      C    C
ATOM 2611  O   GLU C 182     -36.004  68.376  41.153  1.00 27.59      C    O
ATOM 2612  N   ASN C 183     -35.756  67.783  43.313  1.00 32.26      C    N
ATOM 2613  CA  ASN C 183     -37.165  67.851  43.650  1.00 32.26      C    C
ATOM 2614  CB  ASN C 183     -37.766  69.186  43.239  1.00 27.03      C    C
ATOM 2615  CG  ASN C 183     -39.108  69.429  43.888  1.00 27.03      C    C
ATOM 2616  OD1 ASN C 183     -39.213  69.506  45.119  1.00 27.03      C    O
ATOM 2617  ND2 ASN C 183     -40.152  69.547  43.064  1.00 27.03      C    N
ATOM 2618  C   ASN C 183     -37.905  66.719  42.973  1.00 32.26      C    C
ATOM 2619  O   ASN C 183     -39.115  66.779  42.774  1.00 32.26      C    O
ATOM 2620  N   LYS C 184     -37.159  65.688  42.605  1.00 40.74      C    N
ATOM 2621  CA  LYS C 184     -37.751  64.517  41.988  1.00 40.74      C    C
ATOM 2622  CB  LYS C 184     -37.643  64.588  40.459  1.00 58.91      C    C
ATOM 2623  CG  LYS C 184     -36.599  65.540  39.929  1.00 58.91      C    C
ATOM 2624  CD  LYS C 184     -36.799  65.743  38.439  1.00 58.91      C    C
ATOM 2625  CE  LYS C 184     -35.747  66.669  37.857  1.00 58.91      C    C
ATOM 2626  NZ  LYS C 184     -35.878  66.775  36.371  1.00 58.91      C    N
ATOM 2627  C   LYS C 184     -37.061  63.269  42.540  1.00 40.74      C    C
ATOM 2628  O   LYS C 184     -35.986  63.359  43.134  1.00 40.74      C    O
ATOM 2629  N   ILE C 185     -37.693  62.115  42.382  1.00 30.04      C    N
ATOM 2630  CA  ILE C 185     -37.115  60.879  42.869  1.00 28.53      C    C
ATOM 2631  CB  ILE C 185     -38.198  59.857  43.211  1.00 10.39      C    C
ATOM 2632  CG2 ILE C 185     -37.549  58.553  43.626  1.00 10.39      C    C
ATOM 2633  CG1 ILE C 185     -39.103  60.415  44.317  1.00 10.39      C    C
ATOM 2634  CD1 ILE C 185     -40.343  59.592  44.608  1.00 10.39      C    C
ATOM 2635  C   ILE C 185     -36.208  60.285  41.802  1.00 28.99      C    C
ATOM 2636  O   ILE C 185     -36.634  60.052  40.666  1.00 32.18      C    O
ATOM 2637  N   LEU C 186     -34.957  60.040  42.177  1.00 26.37      C    N
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Figure 8-41

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ATOM 2638  CA  LEU C 186     -33.973  59.471  41.267  1.00 25.57      C    C
ATOM 2639  CB  LEU C 186     -32.634  60.208  41.408  1.00 42.97      C    C
ATOM 2640  CG  LEU C 186     -31.455  59.588  40.650  1.00 42.97      C    C
ATOM 2641  CD1 LEU C 186     -31.805  59.454  39.166  1.00 42.97      C    C
ATOM 2642  CD2 LEU C 186     -30.226  60.441  40.845  1.00 42.97      C    C
ATOM 2643  C   LEU C 186     -33.747  57.981  41.503  1.00 22.71      C    C
ATOM 2644  O   LEU C 186     -33.388  57.569  42.605  1.00 29.64      C    O
ATOM 2645  N   VAL C 187     -33.946  57.178  40.464  1.00 27.84      C    N
ATOM 2646  CA  VAL C 187     -33.746  55.741  40.578  1.00 29.34      C    C
ATOM 2647  CB  VAL C 187     -34.470  54.982  39.466  1.00 23.87      C    C
ATOM 2648  CG1 VAL C 187     -34.156  53.491  39.574  1.00 21.92      C    C
ATOM 2649  CG2 VAL C 187     -35.953  55.221  39.562  1.00 30.93      C    C
ATOM 2650  C   VAL C 187     -32.265  55.419  40.471  1.00 31.55      C    C
ATOM 2651  O   VAL C 187     -31.618  55.787  39.494  1.00 33.87      C    O
ATOM 2652  N   LYS C 188     -31.730  54.720  41.467  1.00 37.45      C    N
ATOM 2653  CA  LYS C 188     -30.313  54.375  41.459  1.00 39.34      C    C
ATOM 2654  CB  LYS C 188     -29.672  54.710  42.815  1.00 52.76      C    C
ATOM 2655  CG  LYS C 188     -29.181  56.150  42.927  1.00 56.74      C    C
ATOM 2656  CD  LYS C 188     -28.065  56.402  41.921  1.00 62.03      C    C
ATOM 2657  CE  LYS C 188     -27.687  57.874  41.815  1.00 66.99      C    C
ATOM 2658  NZ  LYS C 188     -27.058  58.409  43.056  1.00 52.16      C    N
ATOM 2659  C   LYS C 188     -30.054  52.924  41.101  1.00 37.15      C    C
ATOM 2660  O   LYS C 188     -28.960  52.577  40.690  1.00 39.73      C    O
ATOM 2661  N   GLU C 189     -31.060  52.076  41.253  1.00 35.10      C    N
ATOM 2662  CA  GLU C 189     -30.916  50.663  40.923  1.00 37.79      C    C
ATOM 2663  CB  GLU C 189     -30.828  49.815  42.183  1.00 67.23      C    C
ATOM 2664  CG  GLU C 189     -29.760  50.245  43.147  1.00 67.23      C    C
ATOM 2665  CD  GLU C 189     -29.751  49.394  44.400  1.00 67.23      C    C
ATOM 2666  OE1 GLU C 189     -28.950  49.686  45.314  1.00 67.23      C    O
ATOM 2667  OE2 GLU C 189     -30.545  48.429  44.470  1.00 67.23      C    O
ATOM 2668  C   GLU C 189     -32.130  50.220  40.135  1.00 35.31      C    C
ATOM 2669  O   GLU C 189     -33.240  50.215  40.650  1.00 35.87      C    O
ATOM 2670  N   THR C 190     -31.928  49.844  38.885  1.00 32.57      C    N
ATOM 2671  CA  THR C 190     -33.040  49.406  38.069  1.00 34.14      C    C
ATOM 2672  CB  THR C 190     -32.550  49.082  36.639  1.00 24.24      C    C
ATOM 2673  OG1 THR C 190     -33.143  47.862  36.190  1.00 24.24      C    O
ATOM 2674  CG2 THR C 190     -31.050  48.964  36.611  1.00 24.24      C    C
ATOM 2675  C   THR C 190     -33.751  48.200  38.710  1.00 32.62      C    C
ATOM 2676  O   THR C 190     -33.113  47.331  39.310  1.00 33.27      C    O
ATOM 2677  N   GLY C 191     -35.080  48.178  38.599  1.00 28.05      C    N
ATOM 2678  CA  GLY C 191     -35.885  47.104  39.163  1.00 29.50      C    C
ATOM 2679  C   GLY C 191     -37.365  47.458  39.172  1.00 29.70      C    C
ATOM 2680  O   GLY C 191     -37.788  48.373  38.457  1.00 32.41      C    O
ATOM 2681  N   TYR C 192     -38.162  46.741  39.965  1.00 27.76      C    N
ATOM 2682  CA  TYR C 192     -39.599  47.027  40.050  1.00 27.30      C    C
ATOM 2683  CB  TYR C 192     -40.411  45.739  40.153  1.00 42.35      C    C
ATOM 2684  CG  TYR C 192     -40.447  44.962  38.868  1.00 42.35      C    C
ATOM 2685  CD1 TYR C 192     -39.372  44.172  38.485  1.00 42.35      C    C
ATOM 2686  CE1 TYR C 192     -39.371  43.500  37.275  1.00 42.35      C    C
ATOM 2687  CD2 TYR C 192     -41.536  45.063  38.002  1.00 42.35      C    C
ATOM 2688  CE2 TYR C 192     -41.548  44.399  36.784  1.00 42.35      C    C
ATOM 2689  CZ  TYR C 192     -40.456  43.620  36.426  1.00 42.35      C    C
ATOM 2690  OH  TYR C 192     -40.418  42.979  35.211  1.00 42.35      C    O
ATOM 2691  C   TYR C 192     -39.904  47.912  41.247  1.00 25.54      C    C
ATOM 2692  O   TYR C 192     -39.381  47.697  42.339  1.00 26.59      C    O
ATOM 2693  N   PHE C 193     -40.749  48.913  41.043  1.00 30.89      C    N
ATOM 2694  CA  PHE C 193     -41.085  49.819  42.128  1.00 30.89      C    C
ATOM 2695  CB  PHE C 193     -40.363  51.167  41.960  1.00 31.62      C    C
ATOM 2696  CG  PHE C 193     -38.855  51.081  42.011  1.00 31.62      C    C
ATOM 2697  CD1 PHE C 193     -38.132  50.582  40.936  1.00 31.62      C    C
ATOM 2698  CD2 PHE C 193     -38.155  51.526  43.138  1.00 31.62      C    C
ATOM 2699  CE1 PHE C 193     -36.741  50.528  40.978  1.00 31.62      C    C
ATOM 2700  CE2 PHE C 193     -36.761  51.475  43.188  1.00 31.62      C    C
ATOM 2701  CZ  PHE C 193     -36.057  50.977  42.108  1.00 31.62      C    C
ATOM 2702  C   PHE C 193     -42.571  50.106  42.273  1.00 30.89      C    C
ATOM 2703  O   PHE C 193     -43.303  50.234  41.284  1.00 30.89      C    O
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Figure 8-42

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ATOM 2704  N   PHE C 194     -43.000  50.207  43.527  1.00 22.32      C    N
ATOM 2705  CA  PHE C 194     -44.372  50.544  43.854  1.00 22.80      C    C
ATOM 2706  CB  PHE C 194     -44.775  49.904  45.186  1.00 20.11      C    C
ATOM 2707  CG  PHE C 194     -46.114  50.348  45.684  1.00 20.11      C    C
ATOM 2708  CD1 PHE C 194     -47.275  49.989  45.006  1.00 20.11      C    C
ATOM 2709  CD2 PHE C 194     -46.215  51.157  46.812  1.00 20.11      C    C
ATOM 2710  CE1 PHE C 194     -48.516  50.432  45.439  1.00 20.11      C    C
ATOM 2711  CE2 PHE C 194     -47.447  51.608  47.257  1.00 20.11      C    C
ATOM 2712  CZ  PHE C 194     -48.598  51.246  46.572  1.00 20.11      C    C
ATOM 2713  C   PHE C 194     -44.255  52.052  44.007  1.00 23.19      C    C
ATOM 2714  O   PHE C 194     -43.463  52.532  44.817  1.00 25.31      C    O
ATOM 2715  N   ILE C 195     -45.013  52.799  43.216  1.00 31.21      C    N
ATOM 2716  CA  ILE C 195     -44.951  54.252  43.267  1.00 28.42      C    C
ATOM 2717  CB  ILE C 195     -44.556  54.817  41.902  1.00 25.82      C    C
ATOM 2718  CG2 ILE C 195     -44.372  56.312  41.991  1.00 25.82      C    C
ATOM 2719  CG1 ILE C 195     -43.276  54.144  41.422  1.00 25.82      C    C
ATOM 2720  CD1 ILE C 195     -42.901  54.512  40.003  1.00 25.82      C    C
ATOM 2721  C   ILE C 195     -46.307  54.811  43.641  1.00 27.39      C    C
ATOM 2722  O   ILE C 195     -47.314  54.380  43.092  1.00 26.01      C    O
ATOM 2723  N   TYR C 196     -46.332  55.774  44.562  1.00 20.09      C    N
ATOM 2724  CA  TYR C 196     -47.592  56.386  45.004  1.00 24.62      C    C
ATOM 2725  CB  TYR C 196     -48.069  55.773  46.324  1.00 18.94      C    C
ATOM 2726  CG  TYR C 196     -47.051  55.889  47.429  1.00 13.83      C    C
ATOM 2727  CD1 TYR C 196     -45.962  55.025  47.488  1.00 17.14      C    C
ATOM 2728  CE1 TYR C 196     -44.984  55.161  48.472  1.00 15.50      C    C
ATOM 2729  CD2 TYR C 196     -47.145  56.895  48.385  1.00 17.28      C    C
ATOM 2730  CE2 TYR C 196     -46.174  57.041  49.373  1.00 20.45      C    C
ATOM 2731  CZ  TYR C 196     -45.096  56.168  49.411  1.00 16.56      C    C
ATOM 2732  OH  TYR C 196     -44.137  56.286  50.385  1.00 16.79      C    O
ATOM 2733  C   TYR C 196     -47.461  57.886  45.193  1.00 25.87      C    C
ATOM 2734  O   TYR C 196     -46.399  58.389  45.549  1.00 23.08      C    O
ATOM 2735  N   GLY C 197     -48.564  58.587  44.963  1.00 29.13      C    N
ATOM 2736  CA  GLY C 197     -48.572  60.028  45.096  1.00 27.95      C    C
ATOM 2737  C   GLY C 197     -49.964  60.554  45.370  1.00 28.70      C    C
ATOM 2738  O   GLY C 197     -50.945  60.126  44.763  1.00 27.04      C    O
ATOM 2739  N   GLN C 198     -50.046  61.489  46.302  1.00 29.13      C    N
ATOM 2740  CA  GLN C 198     -51.311  62.095  46.668  1.00 31.82      C    C
ATOM 2741  CB  GLN C 198     -51.843  61.483  47.961  1.00 14.77      C    C
ATOM 2742  CG  GLN C 198     -52.997  62.268  48.560  1.00 17.87      C    C
ATOM 2743  CD  GLN C 198     -53.524  61.660  49.841  1.00 21.13      C    C
ATOM 2744  OE1 GLN C 198     -53.962  60.507  49.853  1.00 19.79      C    O
ATOM 2745  NE2 GLN C 198     -53.496  62.430  50.926  1.00 18.38      C    N
ATOM 2746  C   GLN C 198     -51.154  63.592  46.875  1.00 31.77      C    C
ATOM 2747  O   GLN C 198     -50.149  64.054  47.412  1.00 32.60      C    O
ATOM 2748  N   VAL C 199     -52.152  64.347  46.445  1.00 17.67      C    N
ATOM 2749  CA  VAL C 199     -52.135  65.787  46.630  1.00 20.82      C    C
ATOM 2750  CB  VAL C 199     -51.556  66.547  45.381  1.00 15.72      C    C
ATOM 2751  CG1 VAL C 199     -51.536  65.656  44.180  1.00 14.48      C    C
ATOM 2752  CG2 VAL C 199     -52.362  67.797  45.099  1.00 17.19      C    C
ATOM 2753  C   VAL C 199     -53.542  66.269  46.940  1.00 22.95      C    C
ATOM 2754  O   VAL C 199     -54.520  65.754  46.389  1.00 21.67      C    O
ATOM 2755  N   LEU C 200     -53.638  67.237  47.851  1.00 18.13      C    N
ATOM 2756  CA  LEU C 200     -54.928  67.795  48.233  1.00 17.19      C    C
ATOM 2757  CB  LEU C 200     -54.916  68.162  49.716  1.00  9.89      C    C
ATOM 2758  CG  LEU C 200     -56.047  69.072  50.225  1.00  9.89      C    C
ATOM 2759  CD1 LEU C 200     -57.394  68.618  49.674  1.00  9.89      C    C
ATOM 2760  CD2 LEU C 200     -56.037  69.072  51.757  1.00  9.89      C    C
ATOM 2761  C   LEU C 200     -55.261  69.020  47.378  1.00 18.17      C    C
ATOM 2762  O   LEU C 200     -54.632  70.075  47.505  1.00 19.59      C    O
ATOM 2763  N   TYR C 201     -56.238  68.863  46.491  1.00 44.63      C    N
ATOM 2764  CA  TYR C 201     -56.649  69.944  45.616  1.00 44.89      C    C
ATOM 2765  CB  TYR C 201     -57.274  69.372  44.354  1.00 36.36      C    C
ATOM 2766  CG  TYR C 201     -56.254  68.617  43.563  1.00 36.36      C    C
ATOM 2767  CD1 TYR C 201     -55.174  69.280  42.985  1.00 36.36      C    C
ATOM 2768  CE1 TYR C 201     -54.164  68.586  42.344  1.00 36.36      C    C
ATOM 2769  CD2 TYR C 201     -56.300  67.235  43.470  1.00 36.36      C    C
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Figure 8-43

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ATOM 2770  CE2 TYR C 201     -55.289  66.523  42.829  1.00 36.36      C    C
ATOM 2771  CZ  TYR C 201     -54.225  67.209  42.275  1.00 36.36      C    C
ATOM 2772  OH  TYR C 201     -53.197  66.528  41.676  1.00 36.36      C    O
ATOM 2773  C   TYR C 201     -57.603  70.885  46.324  1.00 44.33      C    C
ATOM 2774  O   TYR C 201     -58.616  70.469  46.885  1.00 43.79      C    O
ATOM 2775  N   THR C 202     -57.254  72.164  46.302  1.00 35.98      C    N
ATOM 2776  CA  THR C 202     -58.043  73.185  46.956  1.00 41.23      C    C
ATOM 2777  CB  THR C 202     -57.220  73.802  48.104  1.00 50.96      C    C
ATOM 2778  OG1 THR C 202     -58.030  74.724  48.828  1.00 50.96      C    O
ATOM 2779  CG2 THR C 202     -56.007  74.521  47.571  1.00 50.96      C    C
ATOM 2780  C   THR C 202     -58.445  74.244  45.924  1.00 39.87      C    C
ATOM 2781  O   THR C 202     -58.854  75.354  46.260  1.00 39.00      C    O
ATOM 2782  N   ASP C 203     -58.324  73.865  44.658  1.00 43.51      C    N
ATOM 2783  CA  ASP C 203     -58.658  74.722  43.528  1.00 43.51      C    C
ATOM 2784  CB  ASP C 203     -57.706  74.396  42.370  1.00 65.69      C    C
ATOM 2785  CG  ASP C 203     -57.969  75.224  41.138  1.00 65.69      C    C
ATOM 2786  OD1 ASP C 203     -57.026  75.400  40.341  1.00 65.69      C    O
ATOM 2787  OD2 ASP C 203     -59.112  75.688  40.951  1.00 65.69      C    O
ATOM 2788  C   ASP C 203     -60.110  74.440  43.152  1.00 43.51      C    C
ATOM 2789  O   ASP C 203     -60.592  73.330  43.359  1.00 43.51      C    O
ATOM 2790  N   LYS C 204     -60.820  75.430  42.615  1.00 43.02      C    N
ATOM 2791  CA  LYS C 204     -62.215  75.202  42.245  1.00 43.02      C    C
ATOM 2792  CB  LYS C 204     -63.105  76.303  42.826  1.00 72.07      C    C
ATOM 2793  CG  LYS C 204     -62.841  77.689  42.282  1.00 72.07      C    C
ATOM 2794  CD  LYS C 204     -63.743  78.717  42.951  1.00 72.07      C    C
ATOM 2795  CE  LYS C 204     -63.450  78.826  44.443  1.00 72.07      C    C
ATOM 2796  NZ  LYS C 204     -64.332  79.818  45.126  1.00 72.07      C    N
ATOM 2797  C   LYS C 204     -62.516  75.026  40.747  1.00 43.02      C    C
ATOM 2798  O   LYS C 204     -63.665  75.187  40.323  1.00 43.02      C    O
ATOM 2799  N   THR C 205     -61.504  74.681  39.950  1.00 51.00      C    N
ATOM 2800  CA  THR C 205     -61.717  74.461  38.517  1.00 51.00      C    C
ATOM 2801  CB  THR C 205     -60.384  74.357  37.757  1.00 45.49      C    C
ATOM 2802  OG1 THR C 205     -59.745  73.122  38.087  1.00 45.49      C    O
ATOM 2803  CG2 THR C 205     -59.471  75.499  38.137  1.00 45.49      C    C
ATOM 2804  C   THR C 205     -62.486  73.144  38.367  1.00 51.00      C    C
ATOM 2805  O   THR C 205     -62.355  72.268  39.213  1.00 51.00      C    O
ATOM 2806  N   TYR C 206     -63.268  72.995  37.298  1.00 46.14      C    N
ATOM 2807  CA  TYR C 206     -64.080  71.786  37.101  1.00 46.14      C    C
ATOM 2808  CB  TYR C 206     -64.518  71.637  35.634  1.00 86.01      C    C
ATOM 2809  CG  TYR C 206     -63.438  71.170  34.683  1.00 86.01      C    C
ATOM 2810  CD1 TYR C 206     -63.693  70.166  33.746  1.00 86.01      C    C
ATOM 2811  CE1 TYR C 206     -62.706  69.747  32.849  1.00 86.01      C    C
ATOM 2812  CD2 TYR C 206     -62.168  71.744  34.703  1.00 86.01      C    C
ATOM 2813  CE2 TYR C 206     -61.175  71.335  33.812  1.00 86.01      C    C
ATOM 2814  CZ  TYR C 206     -61.450  70.337  32.889  1.00 86.01      C    C
ATOM 2815  OH  TYR C 206     -60.467  69.935  32.012  1.00 86.01      C    O
ATOM 2816  C   TYR C 206     -63.427  70.482  37.562  1.00 46.14      C    C
ATOM 2817  O   TYR C 206     -64.086  69.626  38.168  1.00 46.14      C    O
ATOM 2818  N   ALA C 207     -62.135  70.330  37.288  1.00 31.75      C    N
ATOM 2819  CA  ALA C 207     -61.431  69.114  37.678  1.00 31.75      C    C
ATOM 2820  CB  ALA C 207     -61.675  68.039  36.647  1.00 18.38      C    C
ATOM 2821  C   ALA C 207     -59.934  69.325  37.865  1.00 31.75      C    C
ATOM 2822  O   ALA C 207     -59.303  70.063  37.118  1.00 31.75      C    O
ATOM 2823  N   MET C 208     -59.375  68.671  38.874  1.00 49.92      C    N
ATOM 2824  CA  MET C 208     -57.954  68.779  39.169  1.00 49.92      C    C
ATOM 2825  CB  MET C 208     -57.743  69.479  40.511  1.00 41.68      C    C
ATOM 2826  CG  MET C 208     -58.096  70.946  40.488  1.00 41.68      C    C
ATOM 2827  SD  MET C 208     -57.034  71.827  39.332  1.00 41.68      C    S
ATOM 2828  CE  MET C 208     -55.624  72.154  40.385  1.00 41.68      C    C
ATOM 2829  C   MET C 208     -57.353  67.386  39.217  1.00 49.92      C    C
ATOM 2830  O   MET C 208     -58.079  66.394  39.230  1.00 49.92      C    O
ATOM 2831  N   GLY C 209     -56.026  67.309  39.237  1.00 31.00      C    N
ATOM 2832  CA  GLY C 209     -55.375  66.013  39.293  1.00 31.00      C    C
ATOM 2833  C   GLY C 209     -53.892  66.117  39.028  1.00 31.00      C    C
ATOM 2834  O   GLY C 209     -53.393  67.183  38.657  1.00 31.00      C    O
ATOM 2835  N   HIS C 210     -53.171  65.020  39.225  1.00 29.97      C    N
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Figure 8-44

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ATOM 2836  CA  HIS C 210     -51.735  65.040  38.983  1.00 29.97      C    C
ATOM 2837  CB  HIS C 210     -50.945  65.099  40.295  1.00 27.06      C    C
ATOM 2838  CG  HIS C 210     -51.304  64.026  41.276  1.00 27.06      C    C
ATOM 2839  CD2 HIS C 210     -50.567  63.022  41.805  1.00 27.06      C    C
ATOM 2840  ND1 HIS C 210     -52.543  63.949  41.880  1.00 27.06      C    N
ATOM 2841  CE1 HIS C 210     -52.551  62.950  42.744  1.00 27.06      C    C
ATOM 2842  NE2 HIS C 210     -51.365  62.371  42.718  1.00 27.06      C    N
ATOM 2843  C   HIS C 210     -51.262  63.859  38.174  1.00 29.97      C    C
ATOM 2844  O   HIS C 210     -51.979  62.881  37.990  1.00 29.97      C    O
ATOM 2845  N   LEU C 211     -50.035  63.967  37.691  1.00 30.78      C    N
ATOM 2846  CA  LEU C 211     -49.429  62.926  36.889  1.00 32.75      C    C
ATOM 2847  CB  LEU C 211     -49.026  63.470  35.525  1.00 33.15      C    C
ATOM 2848  CG  LEU C 211     -50.008  64.409  34.843  1.00 32.41      C    C
ATOM 2849  CD1 LEU C 211     -49.304  65.099  33.704  1.00 32.41      C    C
ATOM 2850  CD2 LEU C 211     -51.217  63.644  34.364  1.00 32.41      C    C
ATOM 2851  C   LEU C 211     -48.169  62.477  37.587  1.00 33.83      C    C
ATOM 2852  O   LEU C 211     -47.349  63.306  37.991  1.00 36.82      C    O
ATOM 2853  N   ILE C 212     -48.025  61.172  37.765  1.00 40.59      C    N
ATOM 2854  CA  ILE C 212     -46.812  60.650  38.353  1.00 38.30      C    C
ATOM 2855  CB  ILE C 212     -47.082  59.445  39.246  1.00 32.84      C    C
ATOM 2856  CG2 ILE C 212     -45.783  58.752  39.589  1.00 39.65      C    C
ATOM 2857  CG1 ILE C 212     -47.761  59.918  40.529  1.00 39.65      C    C
ATOM 2858  CD1 ILE C 212     -48.159  58.793  41.465  1.00 39.65      C    C
ATOM 2859  C   ILE C 212     -46.089  60.252  37.085  1.00 36.25      C    C
ATOM 2860  O   ILE C 212     -46.455  59.274  36.429  1.00 37.25      C    O
ATOM 2861  N   GLN C 213     -45.086  61.043  36.720  1.00 25.14      C    N
ATOM 2862  CA  GLN C 213     -44.349  60.797  35.492  1.00 26.32      C    C
ATOM 2863  CB  GLN C 213     -44.236  62.094  34.693  1.00 39.81      C    C
ATOM 2864  CG  GLN C 213     -45.548  62.826  34.536  1.00 46.24      C    C
ATOM 2865  CD  GLN C 213     -45.390  64.107  33.754  1.00 46.24      C    C
ATOM 2866  OE1 GLN C 213     -44.521  64.929  34.048  1.00 46.24      C    O
ATOM 2867  NE2 GLN C 213     -46.233  64.290  32.751  1.00 46.24      C    N
ATOM 2868  C   GLN C 213     -42.964  60.202  35.659  1.00 24.29      C    C
ATOM 2869  O   GLN C 213     -42.326  60.336  36.695  1.00 23.01      C    O
ATOM 2870  N   ARG C 214     -42.516  59.549  34.595  1.00 35.63      C    N
ATOM 2871  CA  ARG C 214     -41.208  58.923  34.532  1.00 36.20      C    C
ATOM 2872  CB  ARG C 214     -41.368  57.474  34.130  1.00 40.13      C    C
ATOM 2873  CG  ARG C 214     -40.071  56.785  33.886  1.00 32.11      C    C
ATOM 2874  CD  ARG C 214     -40.309  55.477  33.213  1.00 32.11      C    C
ATOM 2875  NE  ARG C 214     -39.077  54.722  33.069  1.00 32.11      C    N
ATOM 2876  CZ  ARG C 214     -38.926  53.717  32.215  1.00 32.11      C    C
ATOM 2877  NH1 ARG C 214     -39.936  53.364  31.431  1.00 32.11      C    N
ATOM 2878  NH2 ARG C 214     -37.777  53.058  32.151  1.00 32.11      C    N
ATOM 2879  C   ARG C 214     -40.339  59.630  33.489  1.00 34.85      C    C
ATOM 2880  O   ARG C 214     -40.721  59.724  32.317  1.00 35.87      C    O
ATOM 2881  N   LYS C 215     -39.183  60.134  33.924  1.00 46.56      C    N
ATOM 2882  CA  LYS C 215     -38.238  60.814  33.037  1.00 51.21      C    C
ATOM 2883  CB  LYS C 215     -37.584  61.986  33.765  1.00153.80      C    C
ATOM 2884  CG  LYS C 215     -37.069  63.093  32.870  1.00 75.44      C    C
ATOM 2885  CD  LYS C 215     -36.330  64.135  33.702  1.00 75.44      C    C
ATOM 2886  CE  LYS C 215     -36.073  65.424  32.934  1.00 75.44      C    C
ATOM 2887  NZ  LYS C 215     -37.328  66.195  32.691  1.00 75.44      C    N
ATOM 2888  C   LYS C 215     -37.196  59.741  32.717  1.00 49.45      C    C
ATOM 2889  O   LYS C 215     -36.359  59.420  33.556  1.00 48.55      C    O
ATOM 2890  N   LYS C 216     -37.266  59.179  31.510  1.00 41.76      C    N
ATOM 2891  CA  LYS C 216     -36.365  58.109  31.079  1.00 41.76      C    C
ATOM 2892  CB  LYS C 216     -36.989  57.346  29.906  1.00 83.55      C    C
ATOM 2893  CG  LYS C 216     -38.300  56.660  30.240  1.00 67.22      C    C
ATOM 2894  CD  LYS C 216     -38.824  55.836  29.075  1.00 67.22      C    C
ATOM 2895  CE  LYS C 216     -39.283  56.706  27.913  1.00 67.22      C    C
ATOM 2896  NZ  LYS C 216     -39.889  55.884  26.825  1.00 67.22      C    N
ATOM 2897  C   LYS C 216     -34.970  58.562  30.679  1.00 41.76      C    C
ATOM 2898  O   LYS C 216     -34.808  59.616  30.075  1.00 41.76      C    O
ATOM 2899  N   VAL C 217     -33.961  57.764  31.016  1.00 38.60      C    N
ATOM 2900  CA  VAL C 217     -32.589  58.096  30.642  1.00 38.60      C    C
ATOM 2901  CB  VAL C 217     -31.554  57.434  31.567  1.00 38.61      C    C
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Figure 8-45

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ATOM 2902  CG1 VAL C 217     -31.527  58.136  32.877  1.00 38.61      C    C
ATOM 2903  CG2 VAL C 217     -31.878  55.961  31.759  1.00 38.61      C    C
ATOM 2904  C   VAL C 217     -32.328  57.596  29.229  1.00 38.60      C    C
ATOM 2905  O   VAL C 217     -31.512  58.156  28.500  1.00 38.60      C    O
ATOM 2906  N   HIS C 218     -33.015  56.522  28.855  1.00112.76      C    N
ATOM 2907  CA  HIS C 218     -32.860  55.961  27.528  1.00112.76      C    C
ATOM 2908  CB  HIS C 218     -32.674  54.448  27.601  1.00175.16      C    C
ATOM 2909  CG  HIS C 218     -31.464  54.043  28.381  1.00175.16      C    C
ATOM 2910  CD2 HIS C 218     -31.202  52.940  29.121  1.00175.16      C    C
ATOM 2911  ND1 HIS C 218     -30.330  54.823  28.438  1.00175.16      C    N
ATOM 2912  CE1 HIS C 218     -29.421  54.217  29.180  1.00175.16      C    C
ATOM 2913  NE2 HIS C 218     -29.925  53.073  29.606  1.00175.16      C    N
ATOM 2914  C   HIS C 218     -34.079  56.347  26.736  1.00112.76      C    C
ATOM 2915  O   HIS C 218     -35.204  55.927  27.015  1.00112.76      C    O
ATOM 2916  N   VAL C 219     -33.823  57.286  25.835  1.00 43.68      C    N
ATOM 2917  CA  VAL C 219     -34.827  57.840  24.944  1.00 43.68      C    C
ATOM 2918  CB  VAL C 219     -35.015  59.344  25.236  1.00 53.99      C    C
ATOM 2919  CG1 VAL C 219     -33.669  60.055  25.191  1.00 53.99      C    C
ATOM 2920  CG2 VAL C 219     -35.991  59.952  24.244  1.00 53.99      C    C
ATOM 2921  C   VAL C 219     -34.357  57.620  23.496  1.00 43.68      C    C
ATOM 2922  O   VAL C 219     -33.476  58.333  23.007  1.00 43.68      C    O
ATOM 2923  N   PHE C 220     -34.952  56.628  22.829  1.00 84.26      C    N
ATOM 2924  CA  PHE C 220     -34.594  56.256  21.457  1.00 84.26      C    C
ATOM 2925  CB  PHE C 220     -35.760  55.547  20.759  1.00198.66      C    C
ATOM 2926  CG  PHE C 220     -35.603  54.047  20.645  1.00198.66      C    C
ATOM 2927  CD1 PHE C 220     -34.346  53.463  20.505  1.00198.66      C    C
ATOM 2928  CD2 PHE C 220     -36.727  53.221  20.610  1.00198.66      C    C
ATOM 2929  CE1 PHE C 220     -34.213  52.081  20.330  1.00198.66      C    C
ATOM 2930  CE2 PHE C 220     -36.605  51.842  20.435  1.00198.66      C    C
ATOM 2931  CZ  PHE C 220     -35.347  51.272  20.293  1.00198.66      C    C
ATOM 2932  C   PHE C 220     -34.127  57.402  20.576  1.00 84.26      C    C
ATOM 2933  O   PHE C 220     -32.936  57.707  20.519  1.00 84.26      C    O
ATOM 2934  N   GLY C 221     -35.068  58.027  19.879  1.00 38.44      C    N
ATOM 2935  CA  GLY C 221     -34.714  59.121  18.993  1.00 38.44      C    C
ATOM 2936  C   GLY C 221     -35.665  60.285  19.156  1.00 38.44      C    C
ATOM 2937  O   GLY C 221     -35.452  61.160  19.995  1.00 38.44      C    O
ATOM 2938  N   ASP C 222     -36.715  60.311  18.345  1.00 83.52      C    N
ATOM 2939  CA  ASP C 222     -37.703  61.374  18.442  1.00 83.52      C    C
ATOM 2940  CB  ASP C 222     -38.418  61.564  17.098  1.00 89.05      C    C
ATOM 2941  CG  ASP C 222     -38.857  60.249  16.469  1.00 89.05      C    C
ATOM 2942  OD1 ASP C 222     -39.528  60.297  15.418  1.00 89.05      C    O
ATOM 2943  OD2 ASP C 222     -38.532  59.170  17.011  1.00 89.05      C    O
ATOM 2944  C   ASP C 222     -38.699  60.986  19.532  1.00 83.52      C    C
ATOM 2945  O   ASP C 222     -39.653  61.709  19.807  1.00 83.52      C    O
ATOM 2946  N   GLU C 223     -38.441  59.847  20.168  1.00 45.02      C    N
ATOM 2947  CA  GLU C 223     -39.301  59.322  21.219  1.00 45.02      C    C
ATOM 2948  CB  GLU C 223     -38.775  57.974  21.692  1.00 52.36      C    C
ATOM 2949  CG  GLU C 223     -38.384  57.078  20.566  1.00 52.36      C    C
ATOM 2950  CD  GLU C 223     -38.713  55.623  20.822  1.00 52.36      C    C
ATOM 2951  OE1 GLU C 223     -38.431  55.114  21.934  1.00 52.36      C    O
ATOM 2952  OE2 GLU C 223     -39.242  54.984  19.887  1.00 52.36      C    O
ATOM 2953  C   GLU C 223     -39.480  60.225  22.433  1.00 45.02      C    C
ATOM 2954  O   GLU C 223     -38.642  61.086  22.739  1.00 45.02      C    O
ATOM 2955  N   LEU C 224     -40.592  60.012  23.128  1.00 44.84      C    N
ATOM 2956  CA  LEU C 224     -40.883  60.783  24.318  1.00 44.84      C    C
ATOM 2957  CB  LEU C 224     -42.329  60.582  24.776  1.00 67.20      C    C
ATOM 2958  CG  LEU C 224     -43.415  60.175  23.779  1.00 67.20      C    C
ATOM 2959  CD1 LEU C 224     -43.088  58.814  23.160  1.00 67.20      C    C
ATOM 2960  CD2 LEU C 224     -44.748  60.110  24.513  1.00 67.20      C    C
ATOM 2961  C   LEU C 224     -39.957  60.250  25.388  1.00 44.84      C    C
ATOM 2962  O   LEU C 224     -39.762  59.049  25.533  1.00 44.84      C    O
ATOM 2963  N   SER C 225     -39.375  61.166  26.124  1.00 54.02      C    N
ATOM 2964  CA  SER C 225     -38.477  60.863  27.220  1.00 54.02      C    C
ATOM 2965  CB  SER C 225     -37.368  61.907  27.250  1.00 45.22      C    C
ATOM 2966  OG  SER C 225     -37.925  63.206  27.213  1.00 45.22      C    O
ATOM 2967  C   SER C 225     -39.266  60.902  28.533  1.00 54.02      C    C
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Figure 8-46

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ATOM 2968  O   SER C 225     -38.893  60.263  29.516  1.00 54.02      C    O
ATOM 2969  N   LEU C 226     -40.357  61.658  28.541  1.00 31.00      C    N
ATOM 2970  CA  LEU C 226     -41.204  61.773  29.725  1.00 29.77      C    C
ATOM 2971  CB  LEU C 226     -41.449  63.244  30.063  1.00 23.35      C    C
ATOM 2972  CG  LEU C 226     -42.182  63.505  31.376  1.00 23.35      C    C
ATOM 2973  CD1 LEU C 226     -41.262  63.154  32.541  1.00 23.35      C    C
ATOM 2974  CD2 LEU C 226     -42.594  64.958  31.457  1.00 23.35      C    C
ATOM 2975  C   LEU C 226     -42.550  61.099  29.496  1.00 25.24      C    C
ATOM 2976  O   LEU C 226     -43.304  61.503  28.624  1.00 26.01      C    O
ATOM 2977  N   VAL C 227     -42.853  60.077  30.278  1.00 59.30      C    N
ATOM 2978  CA  VAL C 227     -44.129  59.394  30.129  1.00 54.30      C    C
ATOM 2979  CB  VAL C 227     -43.940  57.953  29.630  1.00 35.89      C    C
ATOM 2980  CG1 VAL C 227     -43.232  57.972  28.291  1.00 35.89      C    C
ATOM 2981  CG2 VAL C 227     -43.145  57.154  30.630  1.00 35.89      C    C
ATOM 2982  C   VAL C 227     -44.826  59.359  31.471  1.00 50.13      C    C
ATOM 2983  O   VAL C 227     -44.173  59.222  32.507  1.00 41.04      C    O
ATOM 2984  N   THR C 228     -46.147  59.493  31.474  1.00 25.49      C    N
ATOM 2985  CA  THR C 228     -46.831  59.456  32.755  1.00 27.20      C    C
ATOM 2986  CB  THR C 228     -48.073  60.405  32.786  1.00 26.72      C    C
ATOM 2987  OG1 THR C 228     -49.269  59.638  32.656  1.00 26.72      C    O
ATOM 2988  CG2 THR C 228     -47.997  61.437  31.671  1.00 26.72      C    C
ATOM 2989  C   THR C 228     -47.236  58.016  33.076  1.00 25.49      C    C
ATOM 2990  O   THR C 228     -47.854  57.337  32.259  1.00 27.51      C    O
ATOM 2991  N   LEU C 229     -46.847  57.555  34.261  1.00 24.57      C    N
ATOM 2992  CA  LEU C 229     -47.156  56.202  34.708  1.00 21.26      C    C
ATOM 2993  CB  LEU C 229     -46.203  55.796  35.834  1.00 20.93      C    C
ATOM 2994  CG  LEU C 229     -44.829  55.229  35.470  1.00 20.93      C    C
ATOM 2995  CD1 LEU C 229     -44.486  55.550  34.030  1.00 20.93      C    C
ATOM 2996  CD2 LEU C 229     -43.792  55.784  36.432  1.00 20.93      C    C
ATOM 2997  C   LEU C 229     -48.598  56.092  35.193  1.00 21.15      C    C
ATOM 2998  O   LEU C 229     -49.355  55.252  34.716  1.00 21.50      C    O
ATOM 2999  N   PHE C 230     -48.976  56.936  36.145  1.00 23.61      C    N
ATOM 3000  CA  PHE C 230     -50.329  56.912  36.673  1.00 23.35      C    C
ATOM 3001  CB  PHE C 230     -50.370  56.229  38.036  1.00 89.89      C    C
ATOM 3002  CG  PHE C 230     -49.395  55.125  38.170  1.00 89.89      C    C
ATOM 3003  CD1 PHE C 230     -48.213  55.317  38.872  1.00 89.89      C    C
ATOM 3004  CD2 PHE C 230     -49.616  53.907  37.525  1.00 89.89      C    C
ATOM 3005  CE1 PHE C 230     -47.250  54.312  38.927  1.00 89.89      C    C
ATOM 3006  CE2 PHE C 230     -48.666  52.891  37.568  1.00 89.89      C    C
ATOM 3007  CZ  PHE C 230     -47.476  53.092  38.270  1.00 89.89      C    C
ATOM 3008  C   PHE C 230     -50.779  58.329  36.850  1.00 25.24      C    C
ATOM 3009  O   PHE C 230     -49.952  59.233  36.975  1.00 24.00      C    O
ATOM 3010  N   ARG C 231     -52.091  58.532  36.849  1.00 20.52      C    N
ATOM 3011  CA  ARG C 231     -52.637  59.861  37.067  1.00 22.36      C    C
ATOM 3012  CB  ARG C 231     -52.903  60.585  35.744  1.00 43.41      C    C
ATOM 3013  CG  ARG C 231     -53.942  59.984  34.852  1.00 43.41      C    C
ATOM 3014  CD  ARG C 231     -53.802  60.593  33.460  1.00 47.45      C    C
ATOM 3015  NE  ARG C 231     -54.940  60.302  32.593  1.00 54.79      C    N
ATOM 3016  CZ  ARG C 231     -56.134  60.879  32.708  1.00 65.29      C    C
ATOM 3017  NH1 ARG C 231     -56.347  61.788  33.655  1.00 61.52      C    N
ATOM 3018  NH2 ARG C 231     -57.121  60.543  31.884  1.00 66.06      C    N
ATOM 3019  C   ARG C 231     -53.879  59.796  37.938  1.00 24.50      C    C
ATOM 3020  O   ARG C 231     -54.533  58.760  38.056  1.00 27.49      C    O
ATOM 3021  N   CYS C 232     -54.158  60.921  38.577  1.00 32.71      C    N
ATOM 3022  CA  CYS C 232     -55.268  61.066  39.491  1.00 32.65      C    C
ATOM 3023  C   CYS C 232     -56.120  62.225  39.005  1.00 36.11      C    C
ATOM 3024  O   CYS C 232     -55.588  63.242  38.574  1.00 37.54      C    O
ATOM 3025  CB  CYS C 232     -54.707  61.388  40.875  1.00 36.18      C    C
ATOM 3026  SG  CYS C 232     -55.607  60.661  42.270  1.00 36.18      C    S
ATOM 3027  N   ILE C 233     -57.434  62.086  39.075  1.00 21.70      C    N
ATOM 3028  CA  ILE C 233     -58.305  63.168  38.634  1.00 23.40      C    C
ATOM 3029  CB  ILE C 233     -58.791  62.953  37.166  1.00 51.13      C    C
ATOM 3030  CG2 ILE C 233     -59.633  61.694  37.060  1.00 51.13      C    C
ATOM 3031  CG1 ILE C 233     -59.639  64.138  36.717  1.00 51.13      C    C
ATOM 3032  CD1 ILE C 233     -58.896  65.433  36.718  1.00 51.13      C    C
ATOM 3033  C   ILE C 233     -59.504  63.259  39.577  1.00 27.88      C    C
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Figure 8-47

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ATOM 3034  O   ILE C 233     -60.094  62.242  39.962  1.00 28.34      C    O
ATOM 3035  N   GLN C 234     -59.864  64.483  39.949  1.00 24.23      C    N
ATOM 3036  CA  GLN C 234     -60.969  64.690  40.863  1.00 28.12      C    C
ATOM 3037  CB  GLN C 234     -60.396  64.874  42.270  1.00 50.20      C    C
ATOM 3038  CG  GLN C 234     -61.373  64.641  43.399  1.00 50.20      C    C
ATOM 3039  CD  GLN C 234     -61.737  63.178  43.583  1.00 50.20      C    C
ATOM 3040  OE1 GLN C 234     -62.728  62.856  44.237  1.00 50.20      C    O
ATOM 3041  NE2 GLN C 234     -60.935  62.289  43.016  1.00 50.20      C    N
ATOM 3042  C   GLN C 234     -61.786  65.917  40.441  1.00 29.07      C    C
ATOM 3043  O   GLN C 234     -61.219  66.956  40.113  1.00 29.05      C    O
ATOM 3044  N   ASN C 235     -63.112  65.793  40.422  1.00 33.72      C    N
ATOM 3045  CA  ASN C 235     -63.957  66.924  40.067  1.00 37.16      C    C
ATOM 3046  CB  ASN C 235     -65.385  66.472  39.771  1.00 26.62      C    C
ATOM 3047  CG  ASN C 235     -65.544  65.903  38.378  1.00 26.62      C    C
ATOM 3048  OD1 ASN C 235     -65.237  66.563  37.389  1.00 26.62      C    O
ATOM 3049  ND2 ASN C 235     -66.039  64.683  38.291  1.00 26.62      C    N
ATOM 3050  C   ASN C 235     -63.965  67.839  41.277  1.00 35.06      C    C
ATOM 3051  O   ASN C 235     -63.980  67.357  42.406  1.00 32.37      C    O
ATOM 3052  N   MET C 236     -63.948  69.148  41.052  1.00 35.12      C    N
ATOM 3053  CA  MET C 236     -63.951  70.104  42.153  1.00 35.12      C    C
ATOM 3054  CB  MET C 236     -62.787  71.077  41.994  1.00 33.70      C    C
ATOM 3055  CG  MET C 236     -61.435  70.419  41.972  1.00 33.70      C    C
ATOM 3056  SD  MET C 236     -61.039  69.658  43.544  1.00 33.70      C    S
ATOM 3057  CE  MET C 236     -61.324  67.989  43.132  1.00 33.70      C    C
ATOM 3058  C   MET C 236     -65.259  70.893  42.204  1.00 35.12      C    C
ATOM 3059  O   MET C 236     -65.841  71.217  41.170  1.00 35.12      C    O
ATOM 3060  N   PRO C 237     -65.734  71.219  43.412  1.00 44.19      C    N
ATOM 3061  CD  PRO C 237     -65.220  70.779  44.719  1.00 29.36      C    C
ATOM 3062  CA  PRO C 237     -66.977  71.977  43.578  1.00 44.19      C    C
ATOM 3063  CB  PRO C 237     -67.391  71.615  44.991  1.00 29.36      C    C
ATOM 3064  CG  PRO C 237     -66.075  71.578  45.686  1.00 29.36      C    C
ATOM 3065  C   PRO C 237     -66.748  73.480  43.413  1.00 44.19      C    C
ATOM 3066  O   PRO C 237     -65.604  73.932  43.337  1.00 44.19      C    O
ATOM 3067  N   GLU C 238     -67.840  74.243  43.366  1.00 75.93      C    N
ATOM 3068  CA  GLU C 238     -67.774  75.693  43.214  1.00 75.93      C    C
ATOM 3069  CB  GLU C 238     -69.159  76.247  42.884  1.00114.24      C    C
ATOM 3070  CG  GLU C 238     -69.661  75.848  41.517  1.00114.24      C    C
ATOM 3071  CD  GLU C 238     -68.858  76.489  40.405  1.00114.24      C    C
ATOM 3072  OE1 GLU C 238     -67.614  76.362  40.416  1.00114.24      C    O
ATOM 3073  OE2 GLU C 238     -69.472  77.118  39.517  1.00114.24      C    O
ATOM 3074  C   GLU C 238     -67.243  76.383  44.465  1.00 75.93      C    C
ATOM 3075  O   GLU C 238     -66.423  77.297  44.379  1.00 75.93      C    O
ATOM 3076  N   THR C 239     -67.709  75.939  45.626  1.00 45.01      C    N
ATOM 3077  CA  THR C 239     -67.290  76.531  46.891  1.00 45.01      C    C
ATOM 3078  CB  THR C 239     -68.508  77.081  47.657  1.00 76.71      C    C
ATOM 3079  OG1 THR C 239     -69.404  76.006  47.971  1.00 76.71      C    O
ATOM 3080  CG2 THR C 239     -69.242  78.114  46.807  1.00 76.71      C    C
ATOM 3081  C   THR C 239     -66.545  75.549  47.794  1.00 45.01      C    C
ATOM 3082  O   THR C 239     -66.769  74.340  47.736  1.00 45.01      C    O
ATOM 3083  N   LEU C 240     -65.659  76.078  48.629  1.00 50.03      C    N
ATOM 3084  CA  LEU C 240     -64.871  75.261  49.548  1.00 50.03      C    C
ATOM 3085  CB  LEU C 240     -65.724  74.806  50.732  1.00 39.75      C    C
ATOM 3086  CG  LEU C 240     -66.210  75.865  51.715  1.00 39.75      C    C
ATOM 3087  CD1 LEU C 240     -65.023  76.604  52.308  1.00 39.75      C    C
ATOM 3088  CD2 LEU C 240     -67.142  76.822  50.997  1.00 39.75      C    C
ATOM 3089  C   LEU C 240     -64.260  74.033  48.891  1.00 50.03      C    C
ATOM 3090  O   LEU C 240     -64.343  72.927  49.429  1.00 50.03      C    O
ATOM 3091  N   PRO C 241     -63.635  74.203  47.718  1.00 49.74      C    N
ATOM 3092  CD  PRO C 241     -63.189  75.435  47.046  1.00 51.85      C    C
ATOM 3093  CA  PRO C 241     -63.042  73.023  47.087  1.00 45.73      C    C
ATOM 3094  CB  PRO C 241     -62.341  73.605  45.861  1.00 51.85      C    C
ATOM 3095  CG  PRO C 241     -61.942  74.964  46.327  1.00 51.85      C    C
ATOM 3096  C   PRO C 241     -62.077  72.368  48.072  1.00 43.32      C    C
ATOM 3097  O   PRO C 241     -61.195  73.027  48.629  1.00 44.36      C    O
ATOM 3098  N   ASN C 242     -62.249  71.073  48.290  1.00 50.44      C    N
ATOM 3099  CA  ASN C 242     -61.393  70.373  49.232  1.00 47.21      C    C
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Figure 8-48

ATOM	3100	CB	ASN	C	242	-61.920	70.643	50.643	1.00	53.11	C	C
ATOM	3101	CG	ASN	C	242	-60.818	70.894	51.638	1.00	53.11	C	C
ATOM	3102	OD1	ASN	C	242	-61.064	71.362	52.751	1.00	53.11	C	O
ATOM	3103	ND2	ASN	C	242	-59.591	70.581	51.246	1.00	53.11	C	N
ATOM	3104	C	ASN	C	242	-61.338	68.863	48.949	1.00	44.77	C	C
ATOM	3105	O	ASN	C	242	-61.962	68.071	49.655	1.00	44.90	C	O
ATOM	3106	N	ASN	C	243	-60.588	68.466	47.921	1.00	36.60	C	N
ATOM	3107	CA	ASN	C	243	-60.472	67.053	47.550	1.00	33.91	C	C
ATOM	3108	CB	ASN	C	243	-61.145	66.802	46.201	1.00	24.09	C	C
ATOM	3109	CG	ASN	C	243	-62.651	66.659	46.307	1.00	24.09	C	C
ATOM	3110	OD1	ASN	C	243	-63.378	67.114	45.432	1.00	24.09	C	O
ATOM	3111	ND2	ASN	C	243	-63.124	66.012	47.363	1.00	24.09	C	N
ATOM	3112	C	ASN	C	243	-59.042	66.536	47.452	1.00	31.04	C	C
ATOM	3113	O	ASN	C	243	-58.214	67.124	46.767	1.00	30.96	C	O
ATOM	3114	N	SER	C	244	-58.753	65.431	48.132	1.00	17.43	C	N
ATOM	3115	CA	SER	C	244	-57.425	64.829	48.065	1.00	17.43	C	C
ATOM	3116	CB	SER	C	244	-57.002	64.240	49.421	1.00	28.61	C	C
ATOM	3117	OG	SER	C	244	-57.841	63.172	49.835	1.00	28.61	C	O
ATOM	3118	C	SER	C	244	-57.533	63.721	47.017	1.00	21.17	C	C
ATOM	3119	O	SER	C	244	-58.605	63.157	46.819	1.00	26.49	C	O
ATOM	3120	N	CYS	C	245	-56.432	63.419	46.342	1.00	42.89	C	N
ATOM	3121	CA	CYS	C	245	-56.446	62.394	45.314	1.00	41.14	C	C
ATOM	3122	C	CYS	C	245	-55.220	61.512	45.467	1.00	41.70	C	C
ATOM	3123	O	CYS	C	245	-54.101	62.015	45.535	1.00	39.66	C	O
ATOM	3124	CB	CYS	C	245	-56.437	63.053	43.938	1.00	45.52	C	C
ATOM	3125	SG	CYS	C	245	-57.101	61.985	42.635	1.00	45.52	C	S
ATOM	3126	N	TYR	C	246	-55.424	60.200	45.521	1.00	26.06	C	N
ATOM	3127	CA	TYR	C	246	-54.309	59.264	45.671	1.00	22.78	C	C
ATOM	3128	CB	TYR	C	246	-54.382	58.561	47.052	1.00	20.12	C	C
ATOM	3129	CG	TYR	C	246	-53.426	57.383	47.244	1.00	20.12	C	C
ATOM	3130	CD1	TYR	C	246	-52.348	57.460	48.132	1.00	20.12	C	C
ATOM	3131	CE1	TYR	C	246	-51.488	56.363	48.330	1.00	20.12	C	C
ATOM	3132	CD2	TYR	C	246	-53.619	56.186	46.553	1.00	20.12	C	C
ATOM	3133	CE2	TYR	C	246	-52.775	55.096	46.741	1.00	20.12	C	C
ATOM	3134	CZ	TYR	C	246	-51.715	55.180	47.630	1.00	20.12	C	C
ATOM	3135	OH	TYR	C	246	-50.938	54.058	47.843	1.00	20.12	C	O
ATOM	3136	C	TYR	C	246	-54.291	58.216	44.559	1.00	21.51	C	C
ATOM	3137	O	TYR	C	246	-55.327	57.697	44.153	1.00	20.69	C	O
ATOM	3138	N	SER	C	247	-53.107	57.901	44.061	1.00	34.76	C	N
ATOM	3139	CA	SER	C	247	-52.999	56.879	43.037	1.00	33.46	C	C
ATOM	3140	CB	SER	C	247	-53.172	57.480	41.647	1.00	26.72	C	C
ATOM	3141	OG	SER	C	247	-53.274	56.447	40.689	1.00	26.72	C	O
ATOM	3142	C	SER	C	247	-51.641	56.208	43.164	1.00	32.68	C	C
ATOM	3143	O	SER	C	247	-50.657	56.836	43.552	1.00	30.11	C	O
ATOM	3144	N	ALA	C	248	-51.597	54.924	42.857	1.00	24.93	C	N
ATOM	3145	CA	ALA	C	248	-50.358	54.196	42.960	1.00	25.26	C	C
ATOM	3146	CB	ALA	C	248	-50.203	53.640	44.366	1.00	15.38	C	C
ATOM	3147	C	ALA	C	248	-50.318	53.069	41.946	1.00	23.97	C	C
ATOM	3148	O	ALA	C	248	-51.356	52.627	41.449	1.00	20.64	C	O
ATOM	3149	N	GLY	C	249	-49.113	52.602	41.642	1.00	21.91	C	N
ATOM	3150	CA	GLY	C	249	-48.980	51.526	40.691	1.00	14.13	C	C
ATOM	3151	C	GLY	C	249	-47.578	50.976	40.720	1.00	18.36	C	C
ATOM	3152	O	GLY	C	249	-46.713	51.519	41.415	1.00	16.18	C	O
ATOM	3153	N	ILE	C	250	-47.352	49.897	39.979	1.00	25.00	C	N
ATOM	3154	CA	ILE	C	250	-46.037	49.292	39.937	1.00	25.00	C	C
ATOM	3155	CB	ILE	C	250	-46.123	47.774	40.190	1.00	27.18	C	C
ATOM	3156	CG2	ILE	C	250	-44.738	47.148	40.084	1.00	27.18	C	C
ATOM	3157	CG1	ILE	C	250	-46.729	47.523	41.571	1.00	27.18	C	C
ATOM	3158	CD1	ILE	C	250	-46.776	46.069	41.972	1.00	27.18	C	C
ATOM	3159	C	ILE	C	250	-45.459	49.563	38.564	1.00	25.00	C	C
ATOM	3160	O	ILE	C	250	-46.191	49.608	37.576	1.00	25.07	C	O
ATOM	3161	N	ALA	C	251	-44.151	49.770	38.500	1.00	34.94	C	N
ATOM	3162	CA	ALA	C	251	-43.505	50.037	37.225	1.00	36.24	C	C
ATOM	3163	CB	ALA	C	251	-43.641	51.491	36.872	1.00	5.50	C	C
ATOM	3164	C	ALA	C	251	-42.043	49.671	37.296	1.00	39.45	C	C
ATOM	3165	O	ALA	C	251	-41.411	49.838	38.339	1.00	38.98	C	O

Figure 8-49

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ATOM 3166  N   LYS C 252     -41.502  49.166  36.191  1.00 37.66      C    N
ATOM 3167  CA  LYS C 252     -40.097  48.806  36.168  1.00 37.81      C    C
ATOM 3168  CB  LYS C 252     -39.852  47.635  35.222  1.00 76.92      C    C
ATOM 3169  CG  LYS C 252     -38.415  47.159  35.219  1.00 77.40      C    C
ATOM 3170  CD  LYS C 252     -38.317  45.764  34.632  1.00 77.40      C    C
ATOM 3171  CE  LYS C 252     -36.877  45.275  34.560  1.00 77.40      C    C
ATOM 3172  NZ  LYS C 252     -36.080  46.067  33.581  1.00 77.40      C    N
ATOM 3173  C   LYS C 252     -39.321  50.029  35.720  1.00 38.43      C    C
ATOM 3174  O   LYS C 252     -39.565  50.573  34.649  1.00 41.31      C    O
ATOM 3175  N   LEU C 253     -38.407  50.479  36.567  1.00 27.08      C    N
ATOM 3176  CA  LEU C 253     -37.590  51.648  36.261  1.00 26.81      C    C
ATOM 3177  CB  LEU C 253     -37.651  52.661  37.417  1.00 12.04      C    C
ATOM 3178  CG  LEU C 253     -38.883  53.533  37.671  1.00 13.58      C    C
ATOM 3179  CD1 LEU C 253     -40.079  53.040  36.872  1.00  8.38      C    C
ATOM 3180  CD2 LEU C 253     -39.162  53.558  39.170  1.00  9.88      C    C
ATOM 3181  C   LEU C 253     -36.138  51.224  36.048  1.00 28.17      C    C
ATOM 3182  O   LEU C 253     -35.688  50.217  36.602  1.00 25.75      C    O
ATOM 3183  N   GLU C 254     -35.414  51.998  35.244  1.00 34.48      C    N
ATOM 3184  CA  GLU C 254     -34.004  51.734  34.975  1.00 36.15      C    C
ATOM 3185  CB  GLU C 254     -33.688  51.888  33.492  1.00146.82      C    C
ATOM 3186  CG  GLU C 254     -34.213  50.796  32.610  1.00117.42      C    C
ATOM 3187  CD  GLU C 254     -33.615  50.882  31.228  1.00117.42      C    C
ATOM 3188  OE1 GLU C 254     -32.378  50.755  31.109  1.00117.42      C    O
ATOM 3189  OE2 GLU C 254     -34.376  51.086  30.263  1.00117.42      C    O
ATOM 3190  C   GLU C 254     -33.140  52.724  35.740  1.00 36.94      C    C
ATOM 3191  O   GLU C 254     -33.532  53.880  35.943  1.00 36.66      C    O
ATOM 3192  N   GLU C 255     -31.964  52.272  36.163  1.00 35.67      C    N
ATOM 3193  CA  GLU C 255     -31.053  53.155  36.872  1.00 34.57      C    C
ATOM 3194  CB  GLU C 255     -29.702  52.484  37.085  1.00 73.92      C    C
ATOM 3195  CG  GLU C 255     -28.658  53.442  37.623  1.00 73.92      C    C
ATOM 3196  CD  GLU C 255     -27.297  52.803  37.782  1.00 73.92      C    C
ATOM 3197  OE1 GLU C 255     -26.362  53.515  38.203  1.00 73.92      C    O
ATOM 3198  OE2 GLU C 255     -27.165  51.594  37.491  1.00 73.92      C    O
ATOM 3199  C   GLU C 255     -30.870  54.400  36.008  1.00 37.02      C    C
ATOM 3200  O   GLU C 255     -30.593  54.308  34.815  1.00 40.25      C    O
ATOM 3201  N   GLY C 256     -31.039  55.563  36.617  1.00 16.25      C    N
ATOM 3202  CA  GLY C 256     -30.894  56.802  35.886  1.00 16.25      C    C
ATOM 3203  C   GLY C 256     -32.233  57.488  35.705  1.00 16.25      C    C
ATOM 3204  O   GLY C 256     -32.294  58.710  35.522  1.00 16.25      C    O
ATOM 3205  N   ASP C 257     -33.308  56.706  35.737  1.00 20.97      C    N
ATOM 3206  CA  ASP C 257     -34.644  57.264  35.583  1.00 24.25      C    C
ATOM 3207  CB  ASP C 257     -35.695  56.159  35.502  1.00 46.41      C    C
ATOM 3208  CG  ASP C 257     -35.648  55.401  34.201  1.00 46.41      C    C
ATOM 3209  OD1 ASP C 257     -35.146  55.958  33.200  1.00 46.41      C    O
ATOM 3210  OD2 ASP C 257     -36.136  54.253  34.180  1.00 46.41      C    O
ATOM 3211  C   ASP C 257     -35.002  58.168  36.752  1.00 24.04      C    C
ATOM 3212  O   ASP C 257     -34.432  58.064  37.844  1.00 28.50      C    O
ATOM 3213  N   GLU C 258     -35.954  59.056  36.516  1.00 34.23      C    N
ATOM 3214  CA  GLU C 258     -36.414  59.968  37.547  1.00 30.89      C    C
ATOM 3215  CB  GLU C 258     -35.931  61.402  37.270  1.00 50.44      C    C
ATOM 3216  CG  GLU C 258     -34.452  61.649  37.537  1.00 50.44      C    C
ATOM 3217  CD  GLU C 258     -34.030  63.081  37.236  1.00 50.44      C    C
ATOM 3218  OE1 GLU C 258     -32.905  63.463  37.624  1.00 50.44      C    O
ATOM 3219  OE2 GLU C 258     -34.815  63.825  36.608  1.00 50.44      C    O
ATOM 3220  C   GLU C 258     -37.941  59.933  37.565  1.00 29.60      C    C
ATOM 3221  O   GLU C 258     -38.592  59.719  36.530  1.00 29.60      C    O
ATOM 3222  N   LEU C 259     -38.511  60.118  38.749  1.00 29.00      C    N
ATOM 3223  CA  LEU C 259     -39.956  60.144  38.893  1.00 25.47      C    C
ATOM 3224  CB  LEU C 259     -40.417  59.092  39.904  1.00 21.61      C    C
ATOM 3225  CG  LEU C 259     -40.157  57.613  39.604  1.00 21.61      C    C
ATOM 3226  CD1 LEU C 259     -40.473  56.804  40.846  1.00 21.61      C    C
ATOM 3227  CD2 LEU C 259     -40.999  57.148  38.429  1.00 21.61      C    C
ATOM 3228  C   LEU C 259     -40.279  61.541  39.409  1.00 22.81      C    C
ATOM 3229  O   LEU C 259     -39.567  62.061  40.265  1.00 26.89      C    O
ATOM 3230  N   GLN C 260     -41.332  62.153  38.880  1.00 30.89      C    N
ATOM 3231  CA  GLN C 260     -41.731  63.487  39.308  1.00 29.65      C    C
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Figure 8-50

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ATOM 3232  CB  GLN C 260     -41.220  64.527  38.319  1.00 48.71      C    C
ATOM 3233  CG  GLN C 260     -42.035  64.596  37.039  1.00 48.71      C    C
ATOM 3234  CD  GLN C 260     -41.442  65.531  36.000  1.00 48.71      C    C
ATOM 3235  OE1 GLN C 260     -42.109  65.897  35.028  1.00 48.71      C    O
ATOM 3236  NE2 GLN C 260     -40.179  65.914  36.192  1.00 48.71      C    N
ATOM 3237  C   GLN C 260     -43.254  63.553  39.360  1.00 29.64      C    C
ATOM 3238  O   GLN C 260     -43.932  62.867  38.590  1.00 27.17      C    O
ATOM 3239  N   LEU C 261     -43.794  64.370  40.259  1.00 22.04      C    N
ATOM 3240  CA  LEU C 261     -45.240  64.507  40.369  1.00 22.35      C    C
ATOM 3241  CB  LEU C 261     -45.671  64.408  41.836  1.00 30.46      C    C
ATOM 3242  CG  LEU C 261     -47.180  64.266  42.079  1.00 30.46      C    C
ATOM 3243  CD1 LEU C 261     -47.407  63.655  43.444  1.00 30.46      C    C
ATOM 3244  CD2 LEU C 261     -47.875  65.610  41.956  1.00 30.46      C    C
ATOM 3245  C   LEU C 261     -45.622  65.859  39.788  1.00 26.02      C    C
ATOM 3246  O   LEU C 261     -45.202  66.894  40.301  1.00 26.69      C    O
ATOM 3247  N   ALA C 262     -46.421  65.857  38.722  1.00 26.18      C    N
ATOM 3248  CA  ALA C 262     -46.808  67.106  38.067  1.00 28.58      C    C
ATOM 3249  CB  ALA C 262     -46.230  67.144  36.671  1.00 52.04      C    C
ATOM 3250  C   ALA C 262     -48.298  67.381  37.994  1.00 27.88      C    C
ATOM 3251  O   ALA C 262     -49.082  66.491  37.702  1.00 27.91      C    O
ATOM 3252  N   ILE C 263     -48.670  68.633  38.256  1.00 26.70      C    N
ATOM 3253  CA  ILE C 263     -50.059  69.071  38.195  1.00 25.74      C    C
ATOM 3254  CB  ILE C 263     -50.421  69.914  39.417  1.00  8.96      C    C
ATOM 3255  CG2 ILE C 263     -51.849  70.406  39.304  1.00  8.96      C    C
ATOM 3256  CG1 ILE C 263     -50.258  69.074  40.682  1.00  8.96      C    C
ATOM 3257  CD1 ILE C 263     -50.379  69.873  41.986  1.00  8.96      C    C
ATOM 3258  C   ILE C 263     -50.232  69.909  36.923  1.00 24.06      C    C
ATOM 3259  O   ILE C 263     -49.657  70.985  36.799  1.00 23.81      C    O
ATOM 3260  N   PRO C 264     -51.025  69.409  35.958  1.00 48.84      C    N
ATOM 3261  CD  PRO C 264     -51.692  68.102  36.038  1.00 53.78      C    C
ATOM 3262  CA  PRO C 264     -51.312  70.052  34.667  1.00 48.84      C    C
ATOM 3263  CB  PRO C 264     -52.010  68.952  33.878  1.00 53.78      C    C
ATOM 3264  CG  PRO C 264     -51.643  67.679  34.616  1.00 53.78      C    C
ATOM 3265  C   PRO C 264     -52.200  71.278  34.789  1.00 48.84      C    C
ATOM 3266  O   PRO C 264     -53.278  71.329  34.201  1.00 48.84      C    O
ATOM 3267  N   ARG C 265     -51.741  72.272  35.538  1.00 56.55      C    N
ATOM 3268  CA  ARG C 265     -52.513  73.487  35.750  1.00 56.55      C    C
ATOM 3269  CB  ARG C 265     -53.538  73.223  36.851  1.00 89.25      C    C
ATOM 3270  CG  ARG C 265     -54.344  74.412  37.269  1.00 89.25      C    C
ATOM 3271  CD  ARG C 265     -55.452  74.681  36.300  1.00 89.25      C    C
ATOM 3272  NE  ARG C 265     -56.196  75.864  36.705  1.00 89.25      C    N
ATOM 3273  CZ  ARG C 265     -57.257  76.332  36.060  1.00 89.25      C    C
ATOM 3274  NH1 ARG C 265     -57.702  75.708  34.975  1.00 89.25      C    N
ATOM 3275  NH2 ARG C 265     -57.868  77.428  36.498  1.00 89.25      C    N
ATOM 3276  C   ARG C 265     -51.561  74.610  36.163  1.00 56.55      C    C
ATOM 3277  O   ARG C 265     -50.602  74.376  36.908  1.00 56.55      C    O
ATOM 3278  N   GLU C 266     -51.797  75.821  35.667  1.00 55.50      C    N
ATOM 3279  CA  GLU C 266     -50.942  76.939  36.045  1.00 55.50      C    C
ATOM 3280  CB  GLU C 266     -51.046  78.071  35.024  1.00116.81      C    C
ATOM 3281  CG  GLU C 266     -50.265  77.794  33.752  1.00116.81      C    C
ATOM 3282  CD  GLU C 266     -50.299  78.950  32.775  1.00116.81      C    C
ATOM 3283  OE1 GLU C 266     -49.979  80.089  33.184  1.00116.81      C    O
ATOM 3284  OE2 GLU C 266     -50.640  78.716  31.596  1.00116.81      C    O
ATOM 3285  C   GLU C 266     -51.390  77.401  37.424  1.00 55.50      C    C
ATOM 3286  O   GLU C 266     -52.567  77.688  37.634  1.00 55.50      C    O
ATOM 3287  N   ASN C 267     -50.454  77.449  38.367  1.00 70.45      C    N
ATOM 3288  CA  ASN C 267     -50.770  77.846  39.736  1.00 70.45      C    C
ATOM 3289  CB  ASN C 267     -51.158  79.323  39.785  1.00 68.67      C    C
ATOM 3290  CG  ASN C 267     -50.037  80.223  39.305  1.00 68.67      C    C
ATOM 3291  OD1 ASN C 267     -49.802  80.357  38.105  1.00 68.67      C    O
ATOM 3292  ND2 ASN C 267     -49.320  80.827  40.245  1.00 68.67      C    N
ATOM 3293  C   ASN C 267     -51.902  76.965  40.241  1.00 70.45      C    C
ATOM 3294  O   ASN C 267     -53.019  77.423  40.480  1.00 70.45      C    O
ATOM 3295  N   ALA C 268     -51.578  75.687  40.395  1.00 66.76      C    N
ATOM 3296  CA  ALA C 268     -52.510  74.660  40.834  1.00 66.76      C    C
ATOM 3297  CB  ALA C 268     -51.739  73.450  41.325  1.00 69.50      C    C
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Figure 8-51

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ATOM 3298  C   ALA C 268     -53.529  75.059  41.885  1.00 66.76      C    C
ATOM 3299  O   ALA C 268     -54.736  75.034  41.626  1.00 66.76      C    O
ATOM 3300  N   GLN C 269     -53.042  75.412  43.069  1.00 26.38      C    N
ATOM 3301  CA  GLN C 269     -53.911  75.770  44.195  1.00 24.31      C    C
ATOM 3302  CB  GLN C 269     -55.268  76.291  43.702  1.00 63.80      C    C
ATOM 3303  CG  GLN C 269     -55.898  77.322  44.593  1.00 56.45      C    C
ATOM 3304  CD  GLN C 269     -54.976  78.499  44.825  1.00 56.45      C    C
ATOM 3305  OE1 GLN C 269     -54.281  78.943  43.908  1.00 56.45      C    O
ATOM 3306  NE2 GLN C 269     -54.967  79.018  46.052  1.00 56.45      C    N
ATOM 3307  C   GLN C 269     -54.106  74.465  44.967  1.00 25.00      C    C
ATOM 3308  O   GLN C 269     -55.196  73.895  44.999  1.00 23.59      C    O
ATOM 3309  N   ILE C 270     -53.027  73.996  45.580  1.00 51.58      C    N
ATOM 3310  CA  ILE C 270     -53.039  72.747  46.319  1.00 49.79      C    C
ATOM 3311  CB  ILE C 270     -51.950  71.826  45.774  1.00 31.67      C    C
ATOM 3312  CG2 ILE C 270     -52.200  71.564  44.295  1.00 35.23      C    C
ATOM 3313  CG1 ILE C 270     -50.579  72.481  45.948  1.00 35.23      C    C
ATOM 3314  CD1 ILE C 270     -49.432  71.573  45.554  1.00 31.67      C    C
ATOM 3315  C   ILE C 270     -52.869  72.950  47.822  1.00 49.43      C    C
ATOM 3316  O   ILE C 270     -53.054  74.054  48.312  1.00 47.41      C    O
ATOM 3317  N   SER C 271     -52.503  71.908  48.562  1.00 40.46      C    N
ATOM 3318  CA  SER C 271     -52.400  72.072  50.006  1.00 41.12      C    C
ATOM 3319  CB  SER C 271     -53.138  70.949  50.720  1.00 50.81      C    C
ATOM 3320  OG  SER C 271     -53.266  71.258  52.101  1.00 45.57      C    O
ATOM 3321  C   SER C 271     -51.048  72.238  50.670  1.00 38.43      C    C
ATOM 3322  O   SER C 271     -50.956  72.926  51.680  1.00 39.79      C    O
ATOM 3323  N   LEU C 272     -50.002  71.614  50.150  1.00 32.05      C    N
ATOM 3324  CA  LEU C 272     -48.679  71.764  50.769  1.00 30.55      C    C
ATOM 3325  CB  LEU C 272     -48.211  73.228  50.726  1.00 34.94      C    C
ATOM 3326  CG  LEU C 272     -47.676  73.781  49.403  1.00 44.09      C    C
ATOM 3327  CD1 LEU C 272     -46.418  73.042  49.030  1.00 44.09      C    C
ATOM 3328  CD2 LEU C 272     -48.708  73.634  48.307  1.00 44.09      C    C
ATOM 3329  C   LEU C 272     -48.606  71.266  52.216  1.00 36.91      C    C
ATOM 3330  O   LEU C 272     -47.601  71.451  52.892  1.00 35.31      C    O
ATOM 3331  N   ASP C 273     -49.679  70.650  52.693  1.00 31.41      C    N
ATOM 3332  CA  ASP C 273     -49.712  70.088  54.041  1.00 26.58      C    C
ATOM 3333  CB  ASP C 273     -51.168  69.925  54.472  1.00 76.89      C    C
ATOM 3334  CG  ASP C 273     -51.415  70.409  55.871  1.00 76.89      C    C
ATOM 3335  OD1 ASP C 273     -51.041  71.561  56.170  1.00 76.89      C    O
ATOM 3336  OD2 ASP C 273     -51.989  69.645  56.673  1.00 76.89      C    O
ATOM 3337  C   ASP C 273     -49.003  68.710  53.957  1.00 28.24      C    C
ATOM 3338  O   ASP C 273     -49.502  67.771  53.322  1.00 31.57      C    O
ATOM 3339  N   GLY C 274     -47.837  68.605  54.589  1.00 55.23      C    N
ATOM 3340  CA  GLY C 274     -47.048  67.380  54.555  1.00 55.23      C    C
ATOM 3341  C   GLY C 274     -47.732  66.032  54.740  1.00 55.23      C    C
ATOM 3342  O   GLY C 274     -47.212  65.002  54.302  1.00 55.23      C    O
ATOM 3343  N   ASP C 275     -48.894  66.026  55.384  1.00 23.17      C    N
ATOM 3344  CA  ASP C 275     -49.636  64.794  55.637  1.00 23.17      C    C
ATOM 3345  CB  ASP C 275     -50.198  64.821  57.052  1.00 28.48      C    C
ATOM 3346  CG  ASP C 275     -51.264  65.898  57.228  1.00 28.48      C    C
ATOM 3347  OD1 ASP C 275     -51.486  66.669  56.262  1.00 28.48      C    O
ATOM 3348  OD2 ASP C 275     -51.876  65.978  58.319  1.00 28.48      C    O
ATOM 3349  C   ASP C 275     -50.797  64.562  54.669  1.00 23.17      C    C
ATOM 3350  O   ASP C 275     -51.616  63.661  54.875  1.00 23.17      C    O
ATOM 3351  N   VAL C 276     -50.902  65.381  53.634  1.00 31.64      C    N
ATOM 3352  CA  VAL C 276     -51.985  65.182  52.698  1.00 30.75      C    C
ATOM 3353  CB  VAL C 276     -53.120  66.212  52.925  1.00 14.33      C    C
ATOM 3354  CG1 VAL C 276     -52.691  67.593  52.478  1.00 14.33      C    C
ATOM 3355  CG2 VAL C 276     -54.374  65.765  52.179  1.00 14.33      C    C
ATOM 3356  C   VAL C 276     -51.466  65.239  51.268  1.00 28.86      C    C
ATOM 3357  O   VAL C 276     -52.117  64.745  50.341  1.00 29.25      C    O
ATOM 3358  N   THR C 277     -50.286  65.836  51.098  1.00 25.01      C    N
ATOM 3359  CA  THR C 277     -49.639  65.929  49.786  1.00 25.10      C    C
ATOM 3360  CB  THR C 277     -49.522  67.397  49.314  1.00 31.81      C    C
ATOM 3361  OG1 THR C 277     -50.836  67.932  49.116  1.00 32.54      C    O
ATOM 3362  CG2 THR C 277     -48.737  67.494  48.001  1.00 33.24      C    C
ATOM 3363  C   THR C 277     -48.243  65.300  49.895  1.00 23.37      C    C
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Figure 8-52

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ATOM 3364  O   THR C 277     -47.309  65.925  50.395  1.00 25.55      C    O
ATOM 3365  N   PHE C 278     -48.116  64.054  49.444  1.00 27.21      C    N
ATOM 3366  CA  PHE C 278     -46.846  63.343  49.512  1.00 21.38      C    C
ATOM 3367  CB  PHE C 278     -46.816  62.447  50.749  1.00 25.67      C    C
ATOM 3368  CG  PHE C 278     -48.075  61.656  50.953  1.00 25.67      C    C
ATOM 3369  CD1 PHE C 278     -48.206  60.373  50.421  1.00 25.67      C    C
ATOM 3370  CD2 PHE C 278     -49.138  62.204  51.665  1.00 25.67      C    C
ATOM 3371  CE1 PHE C 278     -49.377  59.643  50.594  1.00 25.67      C    C
ATOM 3372  CE2 PHE C 278     -50.310  61.489  51.845  1.00 25.67      C    C
ATOM 3373  CZ  PHE C 278     -50.432  60.197  51.306  1.00 25.67      C    C
ATOM 3374  C   PHE C 278     -46.597  62.523  48.257  1.00 23.84      C    C
ATOM 3375  O   PHE C 278     -47.510  62.259  47.482  1.00 29.00      C    O
ATOM 3376  N   PHE C 279     -45.353  62.104  48.081  1.00 28.14      C    N
ATOM 3377  CA  PHE C 279     -44.932  61.358  46.904  1.00 27.54      C    C
ATOM 3378  CB  PHE C 279     -44.323  62.373  45.936  1.00 30.33      C    C
ATOM 3379  CG  PHE C 279     -43.888  61.811  44.638  1.00 27.40      C    C
ATOM 3380  CD1 PHE C 279     -44.598  60.801  44.021  1.00 29.88      C    C
ATOM 3381  CD2 PHE C 279     -42.780  62.341  43.992  1.00 24.80      C    C
ATOM 3382  CE1 PHE C 279     -44.208  60.323  42.769  1.00 30.17      C    C
ATOM 3383  CE2 PHE C 279     -42.381  61.872  42.740  1.00 25.54      C    C
ATOM 3384  CZ  PHE C 279     -43.094  60.864  42.130  1.00 27.95      C    C
ATOM 3385  C   PHE C 279     -43.908  60.326  47.379  1.00 31.52      C    C
ATOM 3386  O   PHE C 279     -43.042  60.641  48.194  1.00 29.03      C    O
ATOM 3387  N   GLY C 280     -44.008  59.091  46.897  1.00 20.72      C    N
ATOM 3388  CA  GLY C 280     -43.068  58.078  47.349  1.00 21.41      C    C
ATOM 3389  C   GLY C 280     -42.894  56.868  46.456  1.00 21.29      C    C
ATOM 3390  O   GLY C 280     -43.711  56.591  45.567  1.00 20.96      C    O
ATOM 3391  N   ALA C 281     -41.815  56.138  46.704  1.00 17.59      C    N
ATOM 3392  CA  ALA C 281     -41.502  54.950  45.927  1.00 17.59      C    C
ATOM 3393  CB  ALA C 281     -40.539  55.309  44.785  1.00 14.44      C    C
ATOM 3394  C   ALA C 281     -40.893  53.865  46.822  1.00 17.59      C    C
ATOM 3395  O   ALA C 281     -40.035  54.127  47.677  1.00 17.59      C    O
ATOM 3396  N   LEU C 282     -41.347  52.638  46.608  1.00 29.74      C    N
ATOM 3397  CA  LEU C 282     -40.888  51.499  47.381  1.00 27.63      C    C
ATOM 3398  CB  LEU C 282     -42.059  50.924  48.173  1.00 27.76      C    C
ATOM 3399  CG  LEU C 282     -41.799  49.884  49.260  1.00 31.76      C    C
ATOM 3400  CD1 LEU C 282     -43.124  49.432  49.815  1.00 28.19      C    C
ATOM 3401  CD2 LEU C 282     -41.052  48.696  48.705  1.00 33.66      C    C
ATOM 3402  C   LEU C 282     -40.381  50.462  46.399  1.00 28.50      C    C
ATOM 3403  O   LEU C 282     -41.083  50.107  45.450  1.00 27.83      C    O
ATOM 3404  N   LYS C 283     -39.168  49.968  46.615  1.00 31.45      C    N
ATOM 3405  CA  LYS C 283     -38.631  48.958  45.712  1.00 32.96      C    C
ATOM 3406  CB  LYS C 283     -37.107  48.976  45.687  1.00 53.00      C    C
ATOM 3407  CG  LYS C 283     -36.565  48.022  44.662  1.00 56.67      C    C
ATOM 3408  CD  LYS C 283     -35.073  48.067  44.566  1.00 51.52      C    C
ATOM 3409  CE  LYS C 283     -34.617  47.176  43.430  1.00 50.92      C    C
ATOM 3410  NZ  LYS C 283     -33.136  47.157  43.311  1.00 52.84      C    N
ATOM 3411  C   LYS C 283     -39.093  47.557  46.076  1.00 35.99      C    C
ATOM 3412  O   LYS C 283     -38.850  47.064  47.178  1.00 35.06      C    O
ATOM 3413  N   LEU C 284     -39.768  46.921  45.131  1.00 27.46      C    N
ATOM 3414  CA  LEU C 284     -40.260  45.572  45.326  1.00 30.81      C    C
ATOM 3415  CB  LEU C 284     -41.196  45.187  44.184  1.00 26.03      C    C
ATOM 3416  CG  LEU C 284     -42.458  46.047  44.175  1.00 23.32      C    C
ATOM 3417  CD1 LEU C 284     -43.392  45.642  43.048  1.00 21.26      C    C
ATOM 3418  CD2 LEU C 284     -43.131  45.891  45.532  1.00 24.70      C    C
ATOM 3419  C   LEU C 284     -39.085  44.626  45.371  1.00 33.48      C    C
ATOM 3420  O   LEU C 284     -38.192  44.705  44.542  1.00 35.27      C    O
ATOM 3421  N   LEU C 285     -39.085  43.736  46.353  1.00 45.88      C    N
ATOM 3422  CA  LEU C 285     -38.014  42.765  46.499  1.00 45.88      C    C
ATOM 3423  CB  LEU C 285     -38.215  41.957  47.774  1.00 66.70      C    C
ATOM 3424  CG  LEU C 285     -36.914  41.463  48.381  1.00 66.70      C    C
ATOM 3425  CD1 LEU C 285     -36.154  42.652  48.938  1.00 66.70      C    C
ATOM 3426  CD2 LEU C 285     -37.208  40.467  49.474  1.00 66.70      C    C
ATOM 3427  C   LEU C 285     -37.990  41.829  45.291  1.00 45.88      C    C
ATOM 3428  O   LEU C 285     -36.889  41.455  44.845  1.00 47.34      C    O
ATOM 3429  OXT LEU C 285     -39.082  41.469  44.804  1.00 52.56      C    O
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Figure 8-53

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ATOM 3430  CB  VAL K 142      27.439  66.384  22.979  1.00 57.08      K    C
ATOM 3431  CG1 VAL K 142      28.942  66.371  22.810  1.00 57.08      K    C
ATOM 3432  CG2 VAL K 142      26.800  67.332  21.968  1.00 57.08      K    C
ATOM 3433  C   VAL K 142      25.419  64.963  23.255  1.00 75.91      K    C
ATOM 3434  O   VAL K 142      25.126  65.344  24.383  1.00 75.91      K    O
ATOM 3435  N   VAL K 142      27.028  64.487  21.386  1.00 75.91      K    N
ATOM 3436  CA  VAL K 142      26.875  64.953  22.798  1.00 75.91      K    C
ATOM 3437  N   THR K 143      24.513  64.533  22.385  1.00 95.44      K    N
ATOM 3438  CA  THR K 143      23.100  64.542  22.722  1.00 95.44      K    C
ATOM 3439  CB  THR K 143      22.286  65.231  21.627  1.00 94.83      K    C
ATOM 3440  OG1 THR K 143      22.615  64.651  20.362  1.00 94.83      K    O
ATOM 3441  CG2 THR K 143      22.588  66.715  21.593  1.00 94.83      K    C
ATOM 3442  C   THR K 143      22.476  63.182  22.991  1.00 95.44      K    C
ATOM 3443  O   THR K 143      21.342  63.114  23.460  1.00 95.44      K    O
ATOM 3444  N   GLN K 144      23.188  62.101  22.686  1.00 55.18      K    N
ATOM 3445  CA  GLN K 144      22.652  60.761  22.934  1.00 45.80      K    C
ATOM 3446  CB  GLN K 144      22.541  60.540  24.448  1.00 86.97      K    C
ATOM 3447  CG  GLN K 144      22.716  59.103  24.897  1.00 86.97      K    C
ATOM 3448  CD  GLN K 144      22.790  58.957  26.413  1.00 86.97      K    C
ATOM 3449  OE1 GLN K 144      23.161  57.901  26.935  1.00 34.18      K    O
ATOM 3450  NE2 GLN K 144      22.433  60.017  27.127  1.00 34.18      K    N
ATOM 3451  C   GLN K 144      21.276  60.540  22.268  1.00 42.99      K    C
ATOM 3452  O   GLN K 144      20.242  60.667  22.921  1.00 38.07      K    O
ATOM 3453  N   ASP K 145      21.264  60.210  20.976  1.00 39.29      K    N
ATOM 3454  CA  ASP K 145      20.007  59.980  20.255  1.00 39.00      K    C
ATOM 3455  CB  ASP K 145      20.255  59.713  18.762  1.00 65.25      K    C
ATOM 3456  CG  ASP K 145      21.106  60.771  18.101  1.00 83.16      K    C
ATOM 3457  OD1 ASP K 145      20.876  61.967  18.356  1.00 83.16      K    O
ATOM 3458  OD2 ASP K 145      21.999  60.402  17.307  1.00 83.16      K    O
ATOM 3459  C   ASP K 145      19.221  58.784  20.809  1.00 37.04      K    C
ATOM 3460  O   ASP K 145      19.785  57.886  21.448  1.00 36.01      K    O
ATOM 3461  N   CYS K 146      17.916  58.777  20.543  1.00 16.05      K    N
ATOM 3462  CA  CYS K 146      17.044  57.690  20.971  1.00 15.62      K    C
ATOM 3463  CB  CYS K 146      16.872  57.711  22.485  1.00 19.66      K    C
ATOM 3464  SG  CYS K 146      16.313  59.276  23.118  1.00 30.98      K    S
ATOM 3465  C   CYS K 146      15.688  57.797  20.291  1.00 16.99      K    C
ATOM 3466  O   CYS K 146      15.226  58.888  19.982  1.00 14.91      K    O
ATOM 3467  N   LEU K 147      15.057  56.659  20.047  1.00 23.00      K    N
ATOM 3468  CA  LEU K 147      13.759  56.641  19.394  1.00 23.00      K    C
ATOM 3469  CB  LEU K 147      13.927  56.279  17.919  1.00  6.26      K    C
ATOM 3470  CG  LEU K 147      12.637  56.070  17.132  1.00  6.26      K    C
ATOM 3471  CD1 LEU K 147      12.948  56.302  15.667  1.00 10.79      K    C
ATOM 3472  CD2 LEU K 147      12.045  54.668  17.385  1.00 10.79      K    C
ATOM 3473  C   LEU K 147      12.889  55.618  20.103  1.00 23.00      K    C
ATOM 3474  O   LEU K 147      13.376  54.555  20.492  1.00 24.16      K    O
ATOM 3475  N   GLN K 148      11.604  55.927  20.261  1.00 25.58      K    N
ATOM 3476  CA  GLN K 148      10.701  55.031  20.968  1.00 25.60      K    C
ATOM 3477  CB  GLN K 148      10.428  55.591  22.366  1.00 12.05      K    C
ATOM 3478  CG  GLN K 148       9.588  54.705  23.275  1.00 19.51      K    C
ATOM 3479  CD  GLN K 148       9.587  55.213  24.708  1.00 19.51      K    C
ATOM 3480  OE1 GLN K 148      10.387  54.776  25.543  1.00 19.51      K    O
ATOM 3481  NE2 GLN K 148       8.704  56.160  24.994  1.00 19.51      K    N
ATOM 3482  C   GLN K 148       9.396  54.824  20.243  1.00 26.72      K    C
ATOM 3483  O   GLN K 148       8.803  55.772  19.740  1.00 27.23      K    O
ATOM 3484  N   LEU K 149       8.953  53.574  20.203  1.00 24.83      K    N
ATOM 3485  CA  LEU K 149       7.706  53.211  19.551  1.00 23.56      K    C
ATOM 3486  CB  LEU K 149       7.963  52.092  18.540  1.00 22.96      K    C
ATOM 3487  CG  LEU K 149       8.364  52.387  17.087  1.00 22.96      K    C
ATOM 3488  CD1 LEU K 149       8.799  53.826  16.887  1.00 22.96      K    C
ATOM 3489  CD2 LEU K 149       9.474  51.424  16.707  1.00 11.85      K    C
ATOM 3490  C   LEU K 149       6.711  52.727  20.603  1.00 25.21      K    C
ATOM 3491  O   LEU K 149       7.107  52.133  21.608  1.00 25.60      K    O
ATOM 3492  N   ILE K 150       5.426  52.996  20.386  1.00 21.19      K    N
ATOM 3493  CA  ILE K 150       4.394  52.534  21.311  1.00 20.06      K    C
ATOM 3494  CB  ILE K 150       3.813  53.688  22.134  1.00 23.07      K    C
ATOM 3495  CG2 ILE K 150       4.926  54.376  22.905  1.00 23.07      K    C
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Figure 8-54

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ATOM 3496  CG1 ILE K 150       3.115  54.686  21.213  1.00 27.19      K    C
ATOM 3497  CD1 ILE K 150       2.639  55.923  21.926  1.00 27.19      K    C
ATOM 3498  C   ILE K 150       3.290  51.861  20.502  1.00 24.16      K    C
ATOM 3499  O   ILE K 150       3.025  52.239  19.362  1.00 25.21      K    O
ATOM 3500  N   ALA K 151       2.659  50.851  21.083  1.00 42.17      K    N
ATOM 3501  CA  ALA K 151       1.611  50.118  20.388  1.00 42.17      K    C
ATOM 3502  CB  ALA K 151       1.021  49.060  21.319  1.00  3.01      K    C
ATOM 3503  C   ALA K 151       0.504  51.010  19.838  1.00 42.17      K    C
ATOM 3504  O   ALA K 151       0.098  51.993  20.465  1.00 42.17      K    O
ATOM 3505  N   ASP K 152       0.020  50.660  18.652  1.00 48.27      K    N
ATOM 3506  CA  ASP K 152      -1.059  51.406  18.009  1.00 48.27      K    C
ATOM 3507  CB  ASP K 152      -0.803  51.508  16.504  1.00 58.77      K    C
ATOM 3508  CG  ASP K 152      -1.904  52.246  15.774  1.00 58.77      K    C
ATOM 3509  OD1 ASP K 152      -1.887  52.239  14.526  1.00 58.77      K    O
ATOM 3510  OD2 ASP K 152      -2.779  52.836  16.446  1.00 58.77      K    O
ATOM 3511  C   ASP K 152      -2.374  50.669  18.261  1.00 48.27      K    C
ATOM 3512  O   ASP K 152      -2.689  49.699  17.579  1.00 48.27      K    O
ATOM 3513  N   SER K 153      -3.134  51.137  19.245  1.00 56.95      K    N
ATOM 3514  CA  SER K 153      -4.401  50.514  19.596  1.00 56.95      K    C
ATOM 3515  CB  SER K 153      -4.909  51.095  20.913  1.00 78.79      K    C
ATOM 3516  OG  SER K 153      -4.976  52.507  20.846  1.00 78.79      K    O
ATOM 3517  C   SER K 153      -5.466  50.686  18.523  1.00 56.95      K    C
ATOM 3518  O   SER K 153      -6.580  50.201  18.672  1.00 56.95      K    O
ATOM 3519  N   GLU K 154      -5.115  51.362  17.437  1.00 46.02      K    N
ATOM 3520  CA  GLU K 154      -6.053  51.621  16.353  1.00 46.02      K    C
ATOM 3521  CB  GLU K 154      -5.787  53.003  15.764  1.00100.23      K    C
ATOM 3522  CG  GLU K 154      -7.037  53.752  15.405  1.00100.23      K    C
ATOM 3523  CD  GLU K 154      -7.834  54.110  16.632  1.00100.23      K    C
ATOM 3524  OE1 GLU K 154      -7.349  54.947  17.423  1.00100.23      K    O
ATOM 3525  OE2 GLU K 154      -8.934  53.547  16.813  1.00100.23      K    O
ATOM 3526  C   GLU K 154      -5.959  50.596  15.236  1.00 46.02      K    C
ATOM 3527  O   GLU K 154      -6.906  50.414  14.474  1.00 46.02      K    O
ATOM 3528  N   THR K 155      -4.815  49.929  15.144  1.00 53.77      K    N
ATOM 3529  CA  THR K 155      -4.577  48.948  14.092  1.00 53.77      K    C
ATOM 3530  CB  THR K 155      -3.268  49.255  13.376  1.00 32.40      K    C
ATOM 3531  OG1 THR K 155      -3.321  50.579  12.836  1.00 32.40      K    O
ATOM 3532  CG2 THR K 155      -3.019  48.241  12.267  1.00 32.40      K    C
ATOM 3533  C   THR K 155      -4.493  47.513  14.578  1.00 53.77      K    C
ATOM 3534  O   THR K 155      -4.014  47.248  15.678  1.00 53.77      K    O
ATOM 3535  N   PRO K 156      -4.952  46.560  13.754  1.00 50.16      K    N
ATOM 3536  CD  PRO K 156      -5.648  46.714  12.465  1.00 44.41      K    C
ATOM 3537  CA  PRO K 156      -4.901  45.149  14.146  1.00 50.16      K    C
ATOM 3538  CB  PRO K 156      -5.796  44.479  13.111  1.00 44.41      K    C
ATOM 3539  CG  PRO K 156      -5.562  45.322  11.897  1.00 44.41      K    C
ATOM 3540  C   PRO K 156      -3.468  44.643  14.081  1.00 50.16      K    C
ATOM 3541  O   PRO K 156      -2.663  45.139  13.296  1.00 50.16      K    O
ATOM 3542  N   THR K 157      -3.152  43.656  14.907  1.00 42.75      K    N
ATOM 3543  CA  THR K 157      -1.807  43.101  14.925  1.00 42.75      K    C
ATOM 3544  CB  THR K 157      -1.680  42.000  15.982  1.00 42.44      K    C
ATOM 3545  OG1 THR K 157      -2.442  40.854  15.586  1.00 42.44      K    O
ATOM 3546  CG2 THR K 157      -2.203  42.504  17.313  1.00 42.44      K    C
ATOM 3547  C   THR K 157      -1.474  42.519  13.566  1.00 42.75      K    C
ATOM 3548  O   THR K 157      -2.341  42.007  12.873  1.00 42.75      K    O
ATOM 3549  N   ILE K 158      -0.208  42.594  13.191  1.00 45.86      K    N
ATOM 3550  CA  ILE K 158       0.251  42.084  11.902  1.00 45.86      K    C
ATOM 3551  CB  ILE K 158       1.471  42.864  11.430  1.00 26.27      K    C
ATOM 3552  CG2 ILE K 158       1.867  42.416  10.054  1.00 26.27      K    C
ATOM 3553  CG1 ILE K 158       1.159  44.355  11.436  1.00 26.27      K    C
ATOM 3554  CD1 ILE K 158       2.343  45.212  11.089  1.00 26.27      K    C
ATOM 3555  C   ILE K 158       0.641  40.607  11.928  1.00 45.86      K    C
ATOM 3556  O   ILE K 158       1.423  40.179  12.779  1.00 45.86      K    O
ATOM 3557  N   GLN K 159       0.107  39.835  10.985  1.00 37.97      K    N
ATOM 3558  CA  GLN K 159       0.411  38.413  10.893  1.00 37.97      K    C
ATOM 3559  CB  GLN K 159      -0.865  37.623  10.649  1.00 35.06      K    C
ATOM 3560  CG  GLN K 159      -1.843  37.771  11.776  1.00 35.06      K    C
ATOM 3561  CD  GLN K 159      -1.249  37.333  13.089  1.00 35.06      K    C
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Figure 8-55

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ATOM 3562  OE1 GLN K 159      -1.596  37.858  14.139  1.00 35.06      K    O
ATOM 3563  NE2 GLN K 159      -0.348  36.359  13.041  1.00 35.06      K    N
ATOM 3564  C   GLN K 159       1.379  38.213   9.747  1.00 37.97      K    C
ATOM 3565  O   GLN K 159       1.168  38.734   8.658  1.00 37.97      K    O
ATOM 3566  N   LYS K 160       2.446  37.460   9.981  1.00 55.23      K    N
ATOM 3567  CA  LYS K 160       3.434  37.257   8.933  1.00 55.23      K    C
ATOM 3568  CB  LYS K 160       4.155  38.580   8.670  1.00100.28      K    C
ATOM 3569  CG  LYS K 160       5.134  38.567   7.524  1.00 73.66      K    C
ATOM 3570  CD  LYS K 160       5.683  39.968   7.287  1.00 73.66      K    C
ATOM 3571  CE  LYS K 160       6.593  40.022   6.064  1.00 73.66      K    C
ATOM 3572  NZ  LYS K 160       7.088  41.405   5.787  1.00 73.66      K    N
ATOM 3573  C   LYS K 160       4.439  36.170   9.297  1.00 55.23      K    C
ATOM 3574  O   LYS K 160       5.165  36.284  10.278  1.00 55.23      K    O
ATOM 3575  N   GLY K 161       4.467  35.110   8.501  1.00 61.34      K    N
ATOM 3576  CA  GLY K 161       5.396  34.027   8.753  1.00 61.34      K    C
ATOM 3577  C   GLY K 161       5.200  33.326  10.084  1.00 61.34      K    C
ATOM 3578  O   GLY K 161       6.167  33.051  10.791  1.00 61.34      K    O
ATOM 3579  N   SER K 162       3.950  33.035  10.427  1.00 56.09      K    N
ATOM 3580  CA  SER K 162       3.633  32.351  11.675  1.00 56.09      K    C
ATOM 3581  CB  SER K 162       4.383  31.024  11.749  1.00 79.60      K    C
ATOM 3582  OG  SER K 162       4.003  30.294  12.900  1.00 79.60      K    O
ATOM 3583  C   SER K 162       3.944  33.205  12.909  1.00 56.09      K    C
ATOM 3584  O   SER K 162       3.660  32.809  14.042  1.00 56.09      K    O
ATOM 3585  N   TYR K 163       4.539  34.370  12.686  1.00 33.14      K    N
ATOM 3586  CA  TYR K 163       4.834  35.290  13.778  1.00 33.14      K    C
ATOM 3587  CB  TYR K 163       6.159  36.027  13.565  1.00 62.33      K    C
ATOM 3588  CG  TYR K 163       7.415  35.265  13.896  1.00 62.33      K    C
ATOM 3589  CD1 TYR K 163       7.381  34.098  14.653  1.00 62.33      K    C
ATOM 3590  CE1 TYR K 163       8.553  33.422  14.981  1.00 62.33      K    C
ATOM 3591  CD2 TYR K 163       8.653  35.741  13.475  1.00 62.33      K    C
ATOM 3592  CE2 TYR K 163       9.829  35.081  13.795  1.00 62.33      K    C
ATOM 3593  CZ  TYR K 163       9.775  33.920  14.549  1.00 62.33      K    C
ATOM 3594  OH  TYR K 163      10.944  33.260  14.862  1.00 62.33      K    O
ATOM 3595  C   TYR K 163       3.732  36.346  13.809  1.00 33.14      K    C
ATOM 3596  O   TYR K 163       2.871  36.399  12.924  1.00 33.14      K    O
ATOM 3597  N   THR K 164       3.781  37.194  14.828  1.00 36.71      K    N
ATOM 3598  CA  THR K 164       2.818  38.273  14.972  1.00 36.71      K    C
ATOM 3599  CB  THR K 164       1.683  37.882  15.957  1.00 46.35      K    C
ATOM 3600  OG1 THR K 164       0.904  39.038  16.272  1.00 46.35      K    O
ATOM 3601  CG2 THR K 164       2.246  37.307  17.216  1.00 46.35      K    C
ATOM 3602  C   THR K 164       3.564  39.523  15.449  1.00 36.71      K    C
ATOM 3603  O   THR K 164       4.295  39.491  16.437  1.00 36.71      K    O
ATOM 3604  N   PHE K 165       3.391  40.616  14.716  1.00 44.32      K    N
ATOM 3605  CA  PHE K 165       4.056  41.876  15.036  1.00 44.32      K    C
ATOM 3606  CB  PHE K 165       4.820  42.384  13.822  1.00 23.24      K    C
ATOM 3607  CG  PHE K 165       5.761  41.374  13.248  1.00 23.24      K    C
ATOM 3608  CD1 PHE K 165       5.281  40.312  12.478  1.00 23.24      K    C
ATOM 3609  CD2 PHE K 165       7.127  41.441  13.530  1.00 23.24      K    C
ATOM 3610  CE1 PHE K 165       6.145  39.333  12.002  1.00 23.24      K    C
ATOM 3611  CE2 PHE K 165       7.998  40.472  13.062  1.00 23.24      K    C
ATOM 3612  CZ  PHE K 165       7.508  39.414  12.297  1.00 23.24      K    C
ATOM 3613  C   PHE K 165       3.075  42.946  15.480  1.00 44.32      K    C
ATOM 3614  O   PHE K 165       1.966  43.038  14.957  1.00 44.32      K    O
ATOM 3615  N   VAL K 166       3.478  43.768  16.439  1.00 38.43      K    N
ATOM 3616  CA  VAL K 166       2.572  44.792  16.907  1.00 38.43      K    C
ATOM 3617  CB  VAL K 166       2.807  45.159  18.418  1.00 28.12      K    C
ATOM 3618  CG1 VAL K 166       3.843  44.235  19.035  1.00 28.12      K    C
ATOM 3619  CG2 VAL K 166       3.208  46.615  18.561  1.00 28.12      K    C
ATOM 3620  C   VAL K 166       2.725  46.018  16.033  1.00 38.43      K    C
ATOM 3621  O   VAL K 166       3.820  46.320  15.555  1.00 38.43      K    O
ATOM 3622  N   PRO K 167       1.608  46.720  15.783  1.00 31.42      K    N
ATOM 3623  CD  PRO K 167       0.247  46.301  16.149  1.00 37.53      K    C
ATOM 3624  CA  PRO K 167       1.565  47.932  14.969  1.00 31.42      K    C
ATOM 3625  CB  PRO K 167       0.070  48.169  14.781  1.00 37.53      K    C
ATOM 3626  CG  PRO K 167      -0.540  46.826  14.996  1.00 37.53      K    C
ATOM 3627  C   PRO K 167       2.190  49.035  15.803  1.00 31.42      K    C
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Figure 8-56

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ATOM 3628  O   PRO K 167      1.687  49.346  16.887  1.00 31.42      K    O
ATOM 3629  N   TRP K 168      3.279  49.621  15.320  1.00 21.10      K    N
ATOM 3630  CA  TRP K 168      3.925  50.687  16.075  1.00 22.33      K    C
ATOM 3631  CB  TRP K 168      5.449  50.581  15.992  1.00 31.76      K    C
ATOM 3632  CG  TRP K 168      5.980  49.326  16.574  1.00 26.02      K    C
ATOM 3633  CD2 TRP K 168      5.842  48.877  17.933  1.00 26.59      K    C
ATOM 3634  CE2 TRP K 168      6.476  47.617  18.019  1.00 25.98      K    C
ATOM 3635  CE3 TRP K 168      5.245  49.416  19.081  1.00 27.72      K    C
ATOM 3636  CD1 TRP K 168      6.667  48.359  15.918  1.00 28.87      K    C
ATOM 3637  NE1 TRP K 168      6.968  47.326  16.775  1.00 31.85      K    N
ATOM 3638  CZ2 TRP K 168      6.534  46.880  19.211  1.00 25.74      K    C
ATOM 3639  CZ3 TRP K 168      5.300  48.686  20.270  1.00 31.48      K    C
ATOM 3640  CH2 TRP K 168      5.941  47.430  20.323  1.00 29.69      K    C
ATOM 3641  C   TRP K 168      3.505  52.081  15.640  1.00 22.64      K    C
ATOM 3642  O   TRP K 168      3.193  52.336  14.473  1.00 24.30      K    O
ATOM 3643  N   LEU K 169      3.501  52.975  16.618  1.00 32.65      K    N
ATOM 3644  CA  LEU K 169      3.168  54.366  16.417  1.00 33.12      K    C
ATOM 3645  CB  LEU K 169      1.904  54.686  17.193  1.00 67.01      K    C
ATOM 3646  CG  LEU K 169      0.845  55.455  16.419  1.00 67.01      K    C
ATOM 3647  CD1 LEU K 169     -0.491  55.285  17.107  1.00 67.01      K    C
ATOM 3648  CD2 LEU K 169      1.245  56.924  16.323  1.00 67.01      K    C
ATOM 3649  C   LEU K 169      4.378  55.078  17.019  1.00 33.75      K    C
ATOM 3650  O   LEU K 169      4.833  54.720  18.113  1.00 32.10      K    O
ATOM 3651  N   LEU K 170      4.925  56.059  16.314  1.00 40.75      K    N
ATOM 3652  CA  LEU K 170      6.101  56.750  16.828  1.00 40.75      K    C
ATOM 3653  CB  LEU K 170      6.713  57.659  15.762  1.00 16.35      K    C
ATOM 3654  CG  LEU K 170      7.876  58.480  16.323  1.00 16.35      K    C
ATOM 3655  CD1 LEU K 170      9.063  57.573  16.601  1.00 16.35      K    C
ATOM 3656  CD2 LEU K 170      8.266  59.552  15.352  1.00 16.35      K    C
ATOM 3657  C   LEU K 170      5.839  57.577  18.078  1.00 40.75      K    C
ATOM 3658  O   LEU K 170      5.141  58.586  18.031  1.00 41.50      K    O
ATOM 3659  N   SER K 171      6.403  57.143  19.198  1.00 33.47      K    N
ATOM 3660  CA  SER K 171      6.258  57.873  20.449  1.00 33.48      K    C
ATOM 3661  CB  SER K 171      6.837  57.070  21.616  1.00 52.82      K    C
ATOM 3662  OG  SER K 171      7.031  57.896  22.753  1.00 52.82      K    O
ATOM 3663  C   SER K 171      7.044  59.165  20.277  1.00 31.87      K    C
ATOM 3664  O   SER K 171      6.525  60.254  20.456  1.00 31.57      K    O
ATOM 3665  N   PHE K 172      8.308  59.028  19.919  1.00 44.77      K    N
ATOM 3666  CA  PHE K 172      9.145  60.189  19.708  1.00 41.29      K    C
ATOM 3667  CB  PHE K 172      9.405  60.909  21.033  1.00 52.00      K    C
ATOM 3668  CG  PHE K 172     10.476  60.276  21.857  1.00 30.66      K    C
ATOM 3669  CD1 PHE K 172     11.820  60.494  21.563  1.00 30.66      K    C
ATOM 3670  CD2 PHE K 172     10.149  59.413  22.896  1.00 30.66      K    C
ATOM 3671  CE1 PHE K 172     12.827  59.856  22.289  1.00 30.66      K    C
ATOM 3672  CE2 PHE K 172     11.151  58.767  23.630  1.00 30.66      K    C
ATOM 3673  CZ  PHE K 172     12.493  58.991  23.322  1.00 30.66      K    C
ATOM 3674  C   PHE K 172     10.459  59.733  19.091  1.00 42.83      K    C
ATOM 3675  O   PHE K 172     10.885  58.589  19.274  1.00 43.62      K    O
ATOM 3676  N   LYS K 173     11.087  60.640  18.352  1.00 41.70      K    N
ATOM 3677  CA  LYS K 173     12.363  60.384  17.700  1.00 40.74      K    C
ATOM 3678  CB  LYS K 173     12.187  60.359  16.188  1.00 17.03      K    C
ATOM 3679  CG  LYS K 173     13.472  60.349  15.393  1.00 36.03      K    C
ATOM 3680  CD  LYS K 173     13.160  60.454  13.912  1.00 36.03      K    C
ATOM 3681  CE  LYS K 173     14.420  60.447  13.076  1.00 36.03      K    C
ATOM 3682  NZ  LYS K 173     15.339  61.561  13.440  1.00 36.03      K    N
ATOM 3683  C   LYS K 173     13.242  61.547  18.094  1.00 42.52      K    C
ATOM 3684  O   LYS K 173     12.835  62.695  17.989  1.00 44.01      K    O
ATOM 3685  N   ARG K 174     14.440  61.250  18.562  1.00 37.73      K    N
ATOM 3686  CA  ARG K 174     15.352  62.293  18.994  1.00 37.73      K    C
ATOM 3687  CB  ARG K 174     15.428  62.313  20.515  1.00 22.94      K    C
ATOM 3688  CG  ARG K 174     16.277  63.416  21.073  1.00 22.94      K    C
ATOM 3689  CD  ARG K 174     16.617  63.167  22.528  1.00 22.94      K    C
ATOM 3690  NE  ARG K 174     17.375  64.274  23.096  1.00 22.94      K    N
ATOM 3691  CZ  ARG K 174     18.329  64.136  24.012  1.00 22.94      K    C
ATOM 3692  NH1 ARG K 174     18.640  62.932  24.463  1.00 22.94      K    N
ATOM 3693  NH2 ARG K 174     18.980  65.199  24.477  1.00 22.94      K    N
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Figure 8-57

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ATOM 3694  C   ARG K 174      16.731  62.030  18.431  1.00 37.73      K    C
ATOM 3695  O   ARG K 174      17.393  61.065  18.823  1.00 37.73      K    O
ATOM 3696  N   GLY K 175      17.162  62.876  17.500  1.00 31.96      K    N
ATOM 3697  CA  GLY K 175      18.479  62.699  16.921  1.00 31.96      K    C
ATOM 3698  C   GLY K 175      18.498  62.128  15.523  1.00 31.96      K    C
ATOM 3699  O   GLY K 175      17.451  61.808  14.953  1.00 31.96      K    O
ATOM 3700  N   SER K 176      19.711  61.995  14.989  1.00 55.29      K    N
ATOM 3701  CA  SER K 176      19.950  61.491  13.641  1.00 55.29      K    C
ATOM 3702  CB  SER K 176      21.288  62.026  13.129  1.00 87.11      K    C
ATOM 3703  OG  SER K 176      22.293  61.891  14.119  1.00 87.11      K    O
ATOM 3704  C   SER K 176      19.926  59.974  13.527  1.00 55.29      K    C
ATOM 3705  O   SER K 176      19.195  59.434  12.704  1.00 55.29      K    O
ATOM 3706  N   ALA K 177      20.731  59.288  14.334  1.00 62.89      K    N
ATOM 3707  CA  ALA K 177      20.765  57.826  14.305  1.00 62.89      K    C
ATOM 3708  CB  ALA K 177      21.785  57.301  15.276  1.00 12.23      K    C
ATOM 3709  C   ALA K 177      19.402  57.358  14.726  1.00 62.89      K    C
ATOM 3710  O   ALA K 177      18.707  58.059  15.458  1.00 62.89      K    O
ATOM 3711  N   LEU K 178      19.003  56.177  14.282  1.00 28.39      K    N
ATOM 3712  CA  LEU K 178      17.686  55.679  14.675  1.00 28.39      K    C
ATOM 3713  CB  LEU K 178      17.580  55.637  16.203  1.00 54.87      K    C
ATOM 3714  CG  LEU K 178      17.929  54.375  16.987  1.00 35.94      K    C
ATOM 3715  CD1 LEU K 178      19.023  53.580  16.314  1.00 35.94      K    C
ATOM 3716  CD2 LEU K 178      18.335  54.802  18.386  1.00 35.94      K    C
ATOM 3717  C   LEU K 178      16.495  56.487  14.138  1.00 28.39      K    C
ATOM 3718  O   LEU K 178      16.328  57.666  14.448  1.00 28.39      K    O
ATOM 3719  N   GLU K 179      15.676  55.836  13.324  1.00 36.54      K    N
ATOM 3720  CA  GLU K 179      14.465  56.435  12.787  1.00 36.54      K    C
ATOM 3721  CB  GLU K 179      14.752  57.302  11.554  1.00 87.16      K    C
ATOM 3722  CG  GLU K 179      15.489  56.629  10.432  1.00 36.36      K    C
ATOM 3723  CD  GLU K 179      15.899  57.613   9.340  1.00 36.36      K    C
ATOM 3724  OE1 GLU K 179      16.658  58.563   9.640  1.00 36.36      K    O
ATOM 3725  OE2 GLU K 179      15.466  57.433   8.180  1.00 36.36      K    O
ATOM 3726  C   GLU K 179      13.576  55.248  12.466  1.00 36.54      K    C
ATOM 3727  O   GLU K 179      14.065  54.127  12.362  1.00 36.54      K    O
ATOM 3728  N   GLU K 180      12.274  55.471  12.353  1.00 31.67      K    N
ATOM 3729  CA  GLU K 180      11.352  54.372  12.082  1.00 31.67      K    C
ATOM 3730  CB  GLU K 180       9.963  54.709  12.624  1.00 38.67      K    C
ATOM 3731  CG  GLU K 180       8.877  53.737  12.230  1.00 38.67      K    C
ATOM 3732  CD  GLU K 180       7.551  54.091  12.866  1.00 38.67      K    C
ATOM 3733  OE1 GLU K 180       7.245  55.299  12.967  1.00 48.46      K    O
ATOM 3734  OE2 GLU K 180       6.806  53.170  13.261  1.00 48.46      K    O
ATOM 3735  C   GLU K 180      11.266  54.036  10.606  1.00 31.67      K    C
ATOM 3736  O   GLU K 180      10.947  54.889   9.793  1.00 31.67      K    O
ATOM 3737  N   LYS K 181      11.552  52.785  10.268  1.00 69.23      K    N
ATOM 3738  CA  LYS K 181      11.513  52.342   8.883  1.00 69.23      K    C
ATOM 3739  CB  LYS K 181      12.565  51.265   8.643  1.00 71.22      K    C
ATOM 3740  CG  LYS K 181      12.662  50.779   7.206  1.00 71.22      K    C
ATOM 3741  CD  LYS K 181      13.270  51.823   6.296  1.00 71.22      K    C
ATOM 3742  CE  LYS K 181      13.605  51.218   4.943  1.00 71.22      K    C
ATOM 3743  NZ  LYS K 181      14.424  52.135   4.110  1.00 71.22      K    N
ATOM 3744  C   LYS K 181      10.145  51.792   8.541  1.00 69.23      K    C
ATOM 3745  O   LYS K 181       9.181  52.542   8.415  1.00 69.23      K    O
ATOM 3746  N   GLU K 182      10.049  50.476   8.403  1.00 24.36      K    N
ATOM 3747  CA  GLU K 182       8.779  49.868   8.045  1.00 24.36      K    C
ATOM 3748  CB  GLU K 182       8.961  48.935   6.854  1.00 78.91      K    C
ATOM 3749  CG  GLU K 182       9.712  49.583   5.714  1.00 78.91      K    C
ATOM 3750  CD  GLU K 182       9.891  48.661   4.539  1.00 78.91      K    C
ATOM 3751  OE1 GLU K 182       8.896  48.414   3.829  1.00 78.91      K    O
ATOM 3752  OE2 GLU K 182      11.025  48.177   4.333  1.00 78.91      K    O
ATOM 3753  C   GLU K 182       8.271  49.105   9.243  1.00 24.36      K    C
ATOM 3754  O   GLU K 182       8.254  47.879   9.262  1.00 24.36      K    O
ATOM 3755  N   ASN K 183       7.851  49.853  10.249  1.00 31.32      K    N
ATOM 3756  CA  ASN K 183       7.343  49.284  11.484  1.00 31.32      K    C
ATOM 3757  CB  ASN K 183       6.256  48.251  11.225  1.00 40.96      K    C
ATOM 3758  CG  ASN K 183       5.458  47.943  12.476  1.00 40.96      K    C
ATOM 3759  OD1 ASN K 183       4.824  48.833  13.056  1.00 40.96      K    O
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Figure 8-58

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ATOM 3760  ND2 ASN K 183       5.490  46.687  12.909  1.00 40.96      K    N
ATOM 3761  C   ASN K 183       8.475  48.649  12.262  1.00 31.32      K    C
ATOM 3762  O   ASN K 183       8.263  47.782  13.105  1.00 31.32      K    O
ATOM 3763  N   LYS K 184       9.689  49.083  11.959  1.00 31.14      K    N
ATOM 3764  CA  LYS K 184      10.856  48.593  12.664  1.00 31.14      K    C
ATOM 3765  CB  LYS K 184      11.512  47.439  11.898  1.00 48.54      K    C
ATOM 3766  CG  LYS K 184      11.153  47.357  10.435  1.00 48.54      K    C
ATOM 3767  CD  LYS K 184      11.613  46.035   9.860  1.00 48.54      K    C
ATOM 3768  CE  LYS K 184      11.306  45.935   8.381  1.00 48.54      K    C
ATOM 3769  NZ  LYS K 184      11.855  44.669   7.812  1.00 48.54      K    N
ATOM 3770  C   LYS K 184      11.824  49.752  12.873  1.00 31.14      K    C
ATOM 3771  O   LYS K 184      11.720  50.776  12.205  1.00 31.14      K    O
ATOM 3772  N   ILE K 185      12.738  49.605  13.825  1.00 29.07      K    N
ATOM 3773  CA  ILE K 185      13.713  50.652  14.100  1.00 27.56      K    C
ATOM 3774  CB  ILE K 185      14.207  50.578  15.551  1.00 19.04      K    C
ATOM 3775  CG2 ILE K 185      15.264  51.640  15.792  1.00 19.04      K    C
ATOM 3776  CG1 ILE K 185      13.030  50.763  16.502  1.00 19.04      K    C
ATOM 3777  CD1 ILE K 185      13.371  50.544  17.957  1.00 19.04      K    C
ATOM 3778  C   ILE K 185      14.913  50.506  13.171  1.00 28.02      K    C
ATOM 3779  O   ILE K 185      15.556  49.453  13.134  1.00 31.21      K    O
ATOM 3780  N   LEU K 186      15.209  51.568  12.428  1.00 21.94      K    N
ATOM 3781  CA  LEU K 186      16.329  51.568  11.495  1.00 21.14      K    C
ATOM 3782  CB  LEU K 186      15.916  52.226  10.183  1.00 33.34      K    C
ATOM 3783  CG  LEU K 186      17.057  52.461   9.194  1.00 33.34      K    C
ATOM 3784  CD1 LEU K 186      17.773  51.140   8.918  1.00 33.34      K    C
ATOM 3785  CD2 LEU K 186      16.500  53.069   7.920  1.00 33.34      K    C
ATOM 3786  C   LEU K 186      17.555  52.292  12.048  1.00 18.28      K    C
ATOM 3787  O   LEU K 186      17.473  53.464  12.412  1.00 25.21      K    O
ATOM 3788  N   VAL K 187      18.689  51.595  12.103  1.00 25.88      K    N
ATOM 3789  CA  VAL K 187      19.919  52.182  12.621  1.00 27.38      K    C
ATOM 3790  CB  VAL K 187      20.924  51.103  13.057  1.00 17.67      K    C
ATOM 3791  CG1 VAL K 187      22.234  51.766  13.489  1.00 15.72      K    C
ATOM 3792  CG2 VAL K 187      20.349  50.273  14.183  1.00 24.73      K    C
ATOM 3793  C   VAL K 187      20.568  53.018  11.536  1.00 29.59      K    C
ATOM 3794  O   VAL K 187      20.847  52.520  10.449  1.00 31.91      K    O
ATOM 3795  N   LYS K 188      20.819  54.285  11.834  1.00 30.95      K    N
ATOM 3796  CA  LYS K 188      21.428  55.168  10.851  1.00 32.84      K    C
ATOM 3797  CB  LYS K 188      20.644  56.489  10.776  1.00 36.12      K    C
ATOM 3798  CG  LYS K 188      19.460  56.454   9.818  1.00 40.10      K    C
ATOM 3799  CD  LYS K 188      19.953  56.248   8.388  1.00 45.39      K    C
ATOM 3800  CE  LYS K 188      18.818  55.969   7.409  1.00 50.35      K    C
ATOM 3801  NZ  LYS K 188      17.894  57.122   7.216  1.00 35.52      K    N
ATOM 3802  C   LYS K 188      22.904  55.444  11.111  1.00 30.65      K    C
ATOM 3803  O   LYS K 188      23.626  55.868  10.211  1.00 33.23      K    O
ATOM 3804  N   GLU K 189      23.350  55.210  12.339  1.00 38.36      K    N
ATOM 3805  CA  GLU K 189      24.745  55.429  12.697  1.00 41.05      K    C
ATOM 3806  CB  GLU K 189      24.899  56.691  13.534  1.00 63.46      K    C
ATOM 3807  CG  GLU K 189      24.329  57.928  12.906  1.00 63.46      K    C
ATOM 3808  CD  GLU K 189      24.488  59.137  13.801  1.00 63.46      K    C
ATOM 3809  OE1 GLU K 189      23.981  60.219  13.429  1.00 63.46      K    O
ATOM 3810  OE2 GLU K 189      25.121  59.001  14.875  1.00 63.46      K    O
ATOM 3811  C   GLU K 189      25.235  54.245  13.511  1.00 38.57      K    C
ATOM 3812  O   GLU K 189      24.764  54.001  14.616  1.00 39.13      K    O
ATOM 3813  N   THR K 190      26.195  53.511  12.979  1.00 43.57      K    N
ATOM 3814  CA  THR K 190      26.693  52.360  13.694  1.00 45.14      K    C
ATOM 3815  CB  THR K 190      27.731  51.621  12.847  1.00 27.05      K    C
ATOM 3816  OG1 THR K 190      28.857  51.290  13.659  1.00 27.05      K    O
ATOM 3817  CG2 THR K 190      28.158  52.480  11.669  1.00 27.05      K    C
ATOM 3818  C   THR K 190      27.271  52.776  15.041  1.00 43.62      K    C
ATOM 3819  O   THR K 190      27.902  53.821  15.151  1.00 44.27      K    O
ATOM 3820  N   GLY K 191      27.021  51.957  16.062  1.00 20.96      K    N
ATOM 3821  CA  GLY K 191      27.507  52.232  17.404  1.00 22.41      K    C
ATOM 3822  C   GLY K 191      26.894  51.296  18.440  1.00 22.61      K    C
ATOM 3823  O   GLY K 191      26.355  50.248  18.089  1.00 25.32      K    O
ATOM 3824  N   TYR K 192      26.985  51.659  19.720  1.00 37.92      K    N
ATOM 3825  CA  TYR K 192      26.401  50.838  20.781  1.00 37.46      K    C
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Figure 8-59

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ATOM 3826  CB  TYR K 192      27.303  50.813  22.015  1.00 42.01      K    C
ATOM 3827  CG  TYR K 192      28.546  49.997  21.807  1.00 42.01      K    C
ATOM 3828  CD1 TYR K 192      29.630  50.517  21.103  1.00 42.01      K    C
ATOM 3829  CE1 TYR K 192      30.763  49.755  20.867  1.00 42.01      K    C
ATOM 3830  CD2 TYR K 192      28.625  48.685  22.274  1.00 42.01      K    C
ATOM 3831  CE2 TYR K 192      29.753  47.909  22.041  1.00 42.01      K    C
ATOM 3832  CZ  TYR K 192      30.816  48.451  21.335  1.00 42.01      K    C
ATOM 3833  OH  TYR K 192      31.922  47.684  21.071  1.00 42.01      K    O
ATOM 3834  C   TYR K 192      25.026  51.359  21.168  1.00 35.70      K    C
ATOM 3835  O   TYR K 192      24.821  52.562  21.326  1.00 36.75      K    O
ATOM 3836  N   PHE K 193      24.075  50.450  21.316  1.00 26.70      K    N
ATOM 3837  CA  PHE K 193      22.724  50.855  21.668  1.00 26.70      K    C
ATOM 3838  CB  PHE K 193      21.798  50.772  20.453  1.00 21.80      K    C
ATOM 3839  CG  PHE K 193      22.174  51.691  19.319  1.00 21.80      K    C
ATOM 3840  CD1 PHE K 193      23.252  51.397  18.487  1.00 21.80      K    C
ATOM 3841  CD2 PHE K 193      21.422  52.837  19.047  1.00 21.80      K    C
ATOM 3842  CE1 PHE K 193      23.568  52.231  17.396  1.00 21.80      K    C
ATOM 3843  CE2 PHE K 193      21.734  53.671  17.958  1.00 21.80      K    C
ATOM 3844  CZ  PHE K 193      22.801  53.366  17.139  1.00 21.80      K    C
ATOM 3845  C   PHE K 193      22.093  50.042  22.794  1.00 26.70      K    C
ATOM 3846  O   PHE K 193      22.286  48.824  22.902  1.00 26.70      K    O
ATOM 3847  N   PHE K 194      21.343  50.743  23.638  1.00 14.48      K    N
ATOM 3848  CA  PHE K 194      20.600  50.132  24.734  1.00 14.96      K    C
ATOM 3849  CB  PHE K 194      20.458  51.117  25.889  1.00 18.65      K    C
ATOM 3850  CG  PHE K 194      19.566  50.630  26.981  1.00 18.65      K    C
ATOM 3851  CD1 PHE K 194      19.936  49.554  27.772  1.00 18.65      K    C
ATOM 3852  CD2 PHE K 194      18.332  51.231  27.209  1.00 18.65      K    C
ATOM 3853  CE1 PHE K 194      19.085  49.078  28.777  1.00 18.65      K    C
ATOM 3854  CE2 PHE K 194      17.473  50.765  28.209  1.00 18.65      K    C
ATOM 3855  CZ  PHE K 194      17.853  49.689  28.992  1.00 18.65      K    C
ATOM 3856  C   PHE K 194      19.248  49.896  24.080  1.00 15.35      K    C
ATOM 3857  O   PHE K 194      18.608  50.840  23.622  1.00 17.47      K    O
ATOM 3858  N   ILE K 195      18.825  48.642  24.004  1.00 25.67      K    N
ATOM 3859  CA  ILE K 195      17.566  48.308  23.351  1.00 22.88      K    C
ATOM 3860  CB  ILE K 195      17.798  47.308  22.212  1.00 24.97      K    C
ATOM 3861  CG2 ILE K 195      16.502  47.056  21.463  1.00 24.97      K    C
ATOM 3862  CG1 ILE K 195      18.864  47.851  21.264  1.00 24.97      K    C
ATOM 3863  CD1 ILE K 195      19.257  46.882  20.183  1.00 24.97      K    C
ATOM 3864  C   ILE K 195      16.613  47.681  24.340  1.00 21.85      K    C
ATOM 3865  O   ILE K 195      17.004  46.785  25.080  1.00 20.47      K    O
ATOM 3866  N   TYR K 196      15.365  48.144  24.347  1.00 18.67      K    N
ATOM 3867  CA  TYR K 196      14.356  47.610  25.265  1.00 23.20      K    C
ATOM 3868  CB  TYR K 196      14.175  48.541  26.460  1.00 20.86      K    C
ATOM 3869  CG  TYR K 196      13.790  49.945  26.060  1.00 15.75      K    C
ATOM 3870  CD1 TYR K 196      14.747  50.847  25.591  1.00 19.06      K    C
ATOM 3871  CE1 TYR K 196      14.384  52.136  25.184  1.00 17.42      K    C
ATOM 3872  CD2 TYR K 196      12.461  50.365  26.113  1.00 19.20      K    C
ATOM 3873  CE2 TYR K 196      12.091  51.643  25.708  1.00 22.37      K    C
ATOM 3874  CZ  TYR K 196      13.054  52.521  25.247  1.00 18.48      K    C
ATOM 3875  OH  TYR K 196      12.692  53.781  24.846  1.00 18.71      K    O
ATOM 3876  C   TYR K 196      13.002  47.404  24.599  1.00 24.45      K    C
ATOM 3877  O   TYR K 196      12.615  48.138  23.678  1.00 21.66      K    O
ATOM 3878  N   GLY K 197      12.282  46.401  25.083  1.00 27.93      K    N
ATOM 3879  CA  GLY K 197      10.974  46.106  24.536  1.00 26.75      K    C
ATOM 3880  C   GLY K 197      10.079  45.410  25.545  1.00 27.50      K    C
ATOM 3881  O   GLY K 197      10.508  44.513  26.276  1.00 25.84      K    O
ATOM 3882  N   GLN K 198       8.824  45.829  25.595  1.00 29.22      K    N
ATOM 3883  CA  GLN K 198       7.870  45.235  26.509  1.00 31.91      K    C
ATOM 3884  CB  GLN K 198       7.699  46.106  27.750  1.00 17.12      K    C
ATOM 3885  CG  GLN K 198       6.519  45.692  28.609  1.00 20.22      K    C
ATOM 3886  CD  GLN K 198       6.320  46.585  29.821  1.00 23.48      K    C
ATOM 3887  OE1 GLN K 198       7.202  46.699  30.669  1.00 22.14      K    O
ATOM 3888  NE2 GLN K 198       5.154  47.219  29.912  1.00 20.73      K    N
ATOM 3889  C   GLN K 198       6.521  45.073  25.842  1.00 31.86      K    C
ATOM 3890  O   GLN K 198       6.085  45.941  25.087  1.00 32.69      K    O
ATOM 3891  N   VAL K 199       5.863  43.955  26.116  1.00 19.49      K    N
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Figure 8-60

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ATOM 3892  CA  VAL K 199       4.534  43.712  25.571  1.00 22.64      K    C
ATOM 3893  CB  VAL K 199       4.578  42.876  24.239  1.00 22.87      K    C
ATOM 3894  CG1 VAL K 199       5.916  42.208  24.085  1.00 21.63      K    C
ATOM 3895  CG2 VAL K 199       3.447  41.850  24.210  1.00 24.34      K    C
ATOM 3896  C   VAL K 199       3.669  43.025  26.623  1.00 24.77      K    C
ATOM 3897  O   VAL K 199       4.150  42.202  27.395  1.00 23.49      K    O
ATOM 3898  N   LEU K 200       2.397  43.405  26.673  1.00 36.47      K    N
ATOM 3899  CA  LEU K 200       1.469  42.828  27.629  1.00 35.53      K    C
ATOM 3900  CB  LEU K 200       0.473  43.890  28.095  1.00  8.92      K    C
ATOM 3901  CG  LEU K 200      -0.802  43.415  28.807  1.00  8.92      K    C
ATOM 3902  CD1 LEU K 200      -0.469  42.351  29.856  1.00  8.92      K    C
ATOM 3903  CD2 LEU K 200      -1.490  44.607  29.433  1.00  8.92      K    C
ATOM 3904  C   LEU K 200       0.734  41.652  26.997  1.00 36.51      K    C
ATOM 3905  O   LEU K 200      -0.097  41.823  26.109  1.00 37.93      K    O
ATOM 3906  N   TYR K 201       1.055  40.452  27.460  1.00 37.93      K    N
ATOM 3907  CA  TYR K 201       0.439  39.248  26.943  1.00 38.19      K    C
ATOM 3908  CB  TYR K 201       1.379  38.068  27.146  1.00 65.63      K    C
ATOM 3909  CG  TYR K 201       2.620  38.241  26.327  1.00 65.63      K    C
ATOM 3910  CD1 TYR K 201       2.552  38.230  24.938  1.00 65.63      K    C
ATOM 3911  CE1 TYR K 201       3.666  38.498  24.160  1.00 65.63      K    C
ATOM 3912  CD2 TYR K 201       3.846  38.518  26.925  1.00 65.63      K    C
ATOM 3913  CE2 TYR K 201       4.976  38.792  26.152  1.00 65.63      K    C
ATOM 3914  CZ  TYR K 201       4.873  38.781  24.772  1.00 65.63      K    C
ATOM 3915  OH  TYR K 201       5.967  39.069  23.998  1.00 65.63      K    O
ATOM 3916  C   TYR K 201      -0.893  39.007  27.609  1.00 37.63      K    C
ATOM 3917  O   TYR K 201      -1.000  38.988  28.834  1.00 37.09      K    O
ATOM 3918  N   THR K 202      -1.913  38.838  26.779  1.00 21.20      K    N
ATOM 3919  CA  THR K 202      -3.265  38.616  27.246  1.00 26.45      K    C
ATOM 3920  CB  THR K 202      -4.141  39.796  26.818  1.00 69.03      K    C
ATOM 3921  OG1 THR K 202      -5.439  39.649  27.385  1.00 69.03      K    O
ATOM 3922  CG2 THR K 202      -4.255  39.864  25.318  1.00 69.03      K    C
ATOM 3923  C   THR K 202      -3.781  37.289  26.665  1.00 25.09      K    C
ATOM 3924  O   THR K 202      -4.968  37.001  26.653  1.00 24.22      K    O
ATOM 3925  N   ASP K 203      -2.847  36.479  26.189  1.00 23.25      K    N
ATOM 3926  CA  ASP K 203      -3.137  35.175  25.608  1.00 23.25      K    C
ATOM 3927  CB  ASP K 203      -2.127  34.908  24.485  1.00 70.91      K    C
ATOM 3928  CG  ASP K 203      -2.320  33.562  23.821  1.00 70.91      K    C
ATOM 3929  OD1 ASP K 203      -1.909  33.414  22.650  1.00 70.91      K    O
ATOM 3930  OD2 ASP K 203      -2.867  32.645  24.465  1.00 70.91      K    O
ATOM 3931  C   ASP K 203      -3.021  34.127  26.723  1.00 23.25      K    C
ATOM 3932  O   ASP K 203      -2.251  34.303  27.659  1.00 23.25      K    O
ATOM 3933  N   LYS K 204      -3.783  33.042  26.644  1.00 42.24      K    N
ATOM 3934  CA  LYS K 204      -3.719  32.034  27.696  1.00 42.24      K    C
ATOM 3935  CB  LYS K 204      -5.130  31.684  28.184  1.00 49.06      K    C
ATOM 3936  CG  LYS K 204      -6.020  31.027  27.149  1.00 49.06      K    C
ATOM 3937  CD  LYS K 204      -7.415  30.761  27.714  1.00 49.06      K    C
ATOM 3938  CE  LYS K 204      -8.142  32.060  28.079  1.00 49.06      K    C
ATOM 3939  NZ  LYS K 204      -9.508  31.824  28.632  1.00 49.06      K    N
ATOM 3940  C   LYS K 204      -2.952  30.752  27.367  1.00 42.24      K    C
ATOM 3941  O   LYS K 204      -3.148  29.733  28.030  1.00 42.24      K    O
ATOM 3942  N   THR K 205      -2.076  30.796  26.362  1.00 35.59      K    N
ATOM 3943  CA  THR K 205      -1.272  29.619  26.010  1.00 35.59      K    C
ATOM 3944  CB  THR K 205      -0.541  29.808  24.668  1.00 50.37      K    C
ATOM 3945  OG1 THR K 205       0.515  30.760  24.828  1.00 50.37      K    O
ATOM 3946  CG2 THR K 205      -1.497  30.313  23.613  1.00 50.37      K    C
ATOM 3947  C   THR K 205      -0.232  29.428  27.125  1.00 35.59      K    C
ATOM 3948  O   THR K 205       0.163  30.402  27.764  1.00 35.59      K    O
ATOM 3949  N   TYR K 206       0.217  28.193  27.355  1.00 30.94      K    N
ATOM 3950  CA  TYR K 206       1.172  27.909  28.441  1.00 30.94      K    C
ATOM 3951  CB  TYR K 206       1.884  26.561  28.224  1.00 65.03      K    C
ATOM 3952  CG  TYR K 206       2.954  26.560  27.156  1.00 65.03      K    C
ATOM 3953  CD1 TYR K 206       4.194  25.962  27.387  1.00 65.03      K    C
ATOM 3954  CE1 TYR K 206       5.180  25.944  26.402  1.00 65.03      K    C
ATOM 3955  CD2 TYR K 206       2.724  27.140  25.912  1.00 65.03      K    C
ATOM 3956  CE2 TYR K 206       3.701  27.129  24.920  1.00 65.03      K    C
ATOM 3957  CZ  TYR K 206       4.925  26.530  25.171  1.00 65.03      K    C
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Figure 8-61

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ATOM 3958  OH  TYR K 206       5.887  26.526  24.188  1.00 65.03      K    O
ATOM 3959  C   TYR K 206       2.222  29.002  28.682  1.00 30.94      K    C
ATOM 3960  O   TYR K 206       2.526  29.340  29.833  1.00 30.94      K    O
ATOM 3961  N   ALA K 207       2.762  29.562  27.599  1.00 41.33      K    N
ATOM 3962  CA  ALA K 207       3.777  30.594  27.728  1.00 41.33      K    C
ATOM 3963  CB  ALA K 207       5.126  29.947  27.934  1.00 11.32      K    C
ATOM 3964  C   ALA K 207       3.813  31.511  26.521  1.00 41.33      K    C
ATOM 3965  O   ALA K 207       3.627  31.066  25.394  1.00 41.33      K    O
ATOM 3966  N   MET K 208       4.053  32.795  26.773  1.00 28.14      K    N
ATOM 3967  CA  MET K 208       4.128  33.808  25.721  1.00 28.14      K    C
ATOM 3968  CB  MET K 208       2.944  34.768  25.818  1.00 33.92      K    C
ATOM 3969  CG  MET K 208       1.611  34.142  25.465  1.00 33.92      K    C
ATOM 3970  SD  MET K 208       1.583  33.609  23.738  1.00 33.92      K    S
ATOM 3971  CE  MET K 208       1.178  35.151  22.930  1.00 33.92      K    C
ATOM 3972  C   MET K 208       5.423  34.593  25.865  1.00 28.14      K    C
ATOM 3973  O   MET K 208       6.104  34.500  26.888  1.00 28.14      K    O
ATOM 3974  N   GLY K 209       5.770  35.363  24.843  1.00 27.85      K    N
ATOM 3975  CA  GLY K 209       6.986  36.148  24.913  1.00 27.85      K    C
ATOM 3976  C   GLY K 209       7.331  36.756  23.576  1.00 27.85      K    C
ATOM 3977  O   GLY K 209       6.666  36.479  22.577  1.00 27.85      K    O
ATOM 3978  N   HIS K 210       8.361  37.596  23.542  1.00 22.92      K    N
ATOM 3979  CA  HIS K 210       8.756  38.208  22.285  1.00 22.92      K    C
ATOM 3980  CB  HIS K 210       8.262  39.657  22.198  1.00 30.61      K    C
ATOM 3981  CG  HIS K 210       8.664  40.512  23.357  1.00 30.61      K    C
ATOM 3982  CD2 HIS K 210       9.450  41.609  23.423  1.00 30.61      K    C
ATOM 3983  ND1 HIS K 210       8.194  40.299  24.634  1.00 30.61      K    N
ATOM 3984  CE1 HIS K 210       8.670  41.232  25.437  1.00 30.61      K    C
ATOM 3985  NE2 HIS K 210       9.435  42.041  24.728  1.00 30.61      K    N
ATOM 3986  C   HIS K 210      10.243  38.173  22.075  1.00 22.92      K    C
ATOM 3987  O   HIS K 210      11.009  37.905  22.996  1.00 22.92      K    O
ATOM 3988  N   LEU K 211      10.635  38.457  20.842  1.00 30.61      K    N
ATOM 3989  CA  LEU K 211      12.027  38.475  20.454  1.00 32.58      K    C
ATOM 3990  CB  LEU K 211      12.254  37.500  19.309  1.00 15.25      K    C
ATOM 3991  CG  LEU K 211      11.539  36.153  19.417  1.00 14.51      K    C
ATOM 3992  CD1 LEU K 211      11.621  35.482  18.068  1.00 14.51      K    C
ATOM 3993  CD2 LEU K 211      12.154  35.276  20.514  1.00 14.51      K    C
ATOM 3994  C   LEU K 211      12.364  39.861  19.960  1.00 33.66      K    C
ATOM 3995  O   LEU K 211      11.630  40.427  19.157  1.00 36.65      K    O
ATOM 3996  N   ILE K 212      13.449  40.429  20.464  1.00 28.33      K    N
ATOM 3997  CA  ILE K 212      13.891  41.721  19.979  1.00 26.04      K    C
ATOM 3998  CB  ILE K 212      14.468  42.583  21.097  1.00 21.12      K    C
ATOM 3999  CG2 ILE K 212      15.196  43.778  20.502  1.00 27.93      K    C
ATOM 4000  CG1 ILE K 212      13.327  43.054  22.004  1.00 27.93      K    C
ATOM 4001  CD1 ILE K 212      13.763  43.879  23.194  1.00 27.93      K    C
ATOM 4002  C   ILE K 212      14.975  41.254  19.039  1.00 23.99      K    C
ATOM 4003  O   ILE K 212      16.030  40.812  19.473  1.00 24.99      K    O
ATOM 4004  N   GLN K 213      14.686  41.316  17.747  1.00 40.01      K    N
ATOM 4005  CA  GLN K 213      15.617  40.841  16.742  1.00 41.19      K    C
ATOM 4006  CB  GLN K 213      14.875  39.924  15.767  1.00 27.18      K    C
ATOM 4007  CG  GLN K 213      14.029  38.869  16.436  1.00 33.61      K    C
ATOM 4008  CD  GLN K 213      13.325  37.990  15.434  1.00 33.61      K    C
ATOM 4009  OE1 GLN K 213      12.652  38.476  14.517  1.00 33.61      K    O
ATOM 4010  NE2 GLN K 213      13.471  36.684  15.600  1.00 33.61      K    N
ATOM 4011  C   GLN K 213      16.356  41.917  15.953  1.00 39.16      K    C
ATOM 4012  O   GLN K 213      15.901  43.052  15.816  1.00 37.88      K    O
ATOM 4013  N   ARG K 214      17.503  41.518  15.421  1.00 32.80      K    N
ATOM 4014  CA  ARG K 214      18.346  42.376  14.613  1.00 33.37      K    C
ATOM 4015  CB  ARG K 214      19.746  42.378  15.197  1.00 42.17      K    C
ATOM 4016  CG  ARG K 214      20.735  43.131  14.374  1.00 34.15      K    C
ATOM 4017  CD  ARG K 214      22.129  42.829  14.840  1.00 34.15      K    C
ATOM 4018  NE  ARG K 214      23.110  43.633  14.130  1.00 34.15      K    N
ATOM 4019  CZ  ARG K 214      24.392  43.326  14.071  1.00 34.15      K    C
ATOM 4020  NH1 ARG K 214      24.825  42.229  14.688  1.00 34.15      K    N
ATOM 4021  NH2 ARG K 214      25.226  44.105  13.394  1.00 34.15      K    N
ATOM 4022  C   ARG K 214      18.400  41.862  13.162  1.00 32.02      K    C
ATOM 4023  O   ARG K 214      18.772  40.711  12.911  1.00 33.04      K    O
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Figure 8-62

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ATOM 4024  N   LYS K 215      18.019  42.710  12.214  1.00 31.58      K    N
ATOM 4025  CA  LYS K 215      18.045  42.353  10.800  1.00 36.23      K    C
ATOM 4026  CB  LYS K 215      16.846  42.970  10.091  1.00165.06      K    C
ATOM 4027  CG  LYS K 215      16.416  42.264   8.829  1.00 92.38      K    C
ATOM 4028  CD  LYS K 215      15.296  43.051   8.157  1.00 92.38      K    C
ATOM 4029  CE  LYS K 215      14.576  42.250   7.079  1.00 92.38      K    C
ATOM 4030  NZ  LYS K 215      13.747  41.155   7.663  1.00 92.38      K    N
ATOM 4031  C   LYS K 215      19.340  42.986  10.292  1.00 34.47      K    C
ATOM 4032  O   LYS K 215      19.404  44.209  10.107  1.00 33.57      K    O
ATOM 4033  N   LYS K 216      20.372  42.163  10.083  1.00 27.60      K    N
ATOM 4034  CA  LYS K 216      21.690  42.643   9.639  1.00 27.60      K    C
ATOM 4035  CB  LYS K 216      22.759  41.590   9.943  1.00 69.59      K    C
ATOM 4036  CG  LYS K 216      22.916  41.298  11.416  1.00 53.26      K    C
ATOM 4037  CD  LYS K 216      24.053  40.333  11.690  1.00 53.26      K    C
ATOM 4038  CE  LYS K 216      23.733  38.934  11.205  1.00 53.26      K    C
ATOM 4039  NZ  LYS K 216      24.799  37.971  11.609  1.00 53.26      K    N
ATOM 4040  C   LYS K 216      21.773  43.002   8.171  1.00 27.60      K    C
ATOM 4041  O   LYS K 216      21.162  42.338   7.351  1.00 27.60      K    O
ATOM 4042  N   VAL K 217      22.529  44.049   7.845  1.00 38.65      K    N
ATOM 4043  CA  VAL K 217      22.714  44.453   6.447  1.00 38.65      K    C
ATOM 4044  CB  VAL K 217      23.087  45.940   6.293  1.00 33.10      K    C
ATOM 4045  CG1 VAL K 217      21.896  46.784   6.544  1.00 33.10      K    C
ATOM 4046  CG2 VAL K 217      24.207  46.310   7.253  1.00 33.10      K    C
ATOM 4047  C   VAL K 217      23.849  43.645   5.843  1.00 38.65      K    C
ATOM 4048  O   VAL K 217      23.876  43.403   4.647  1.00 38.65      K    O
ATOM 4049  N   HIS K 218      24.792  43.240   6.681  1.00 39.67      K    N
ATOM 4050  CA  HIS K 218      25.912  42.456   6.222  1.00 39.67      K    C
ATOM 4051  CB  HIS K 218      27.224  43.046   6.724  1.00 55.61      K    C
ATOM 4052  CG  HIS K 218      27.457  44.449   6.272  1.00 55.61      K    C
ATOM 4053  CD2 HIS K 218      28.141  45.468   6.842  1.00 55.61      K    C
ATOM 4054  ND1 HIS K 218      26.978  44.926   5.070  1.00 55.61      K    N
ATOM 4055  CE1 HIS K 218      27.358  46.182   4.919  1.00 55.61      K    C
ATOM 4056  NE2 HIS K 218      28.064  46.535   5.979  1.00 55.61      K    N
ATOM 4057  C   HIS K 218      25.774  41.034   6.708  1.00 39.67      K    C
ATOM 4058  O   HIS K 218      25.594  40.764   7.904  1.00 39.67      K    O
ATOM 4059  N   VAL K 219      25.819  40.131   5.743  1.00 24.29      K    N
ATOM 4060  CA  VAL K 219      25.740  38.714   6.013  1.00 24.29      K    C
ATOM 4061  CB  VAL K 219      24.443  38.127   5.484  1.00 30.75      K    C
ATOM 4062  CG1 VAL K 219      23.299  38.558   6.364  1.00 30.75      K    C
ATOM 4063  CG2 VAL K 219      24.218  38.602   4.057  1.00 30.75      K    C
ATOM 4064  C   VAL K 219      26.913  38.065   5.305  1.00 24.29      K    C
ATOM 4065  O   VAL K 219      27.145  38.303   4.116  1.00 24.29      K    O
ATOM 4066  N   PHE K 220      27.657  37.264   6.057  1.00 23.19      K    N
ATOM 4067  CA  PHE K 220      28.802  36.561   5.528  1.00 23.19      K    C
ATOM 4068  CB  PHE K 220      30.078  37.104   6.172  1.00 32.19      K    C
ATOM 4069  CG  PHE K 220      30.338  38.550   5.854  1.00 32.19      K    C
ATOM 4070  CD1 PHE K 220      29.793  39.556   6.633  1.00 32.19      K    C
ATOM 4071  CD2 PHE K 220      31.091  38.909   4.742  1.00 32.19      K    C
ATOM 4072  CE1 PHE K 220      29.997  40.900   6.309  1.00 32.19      K    C
ATOM 4073  CE2 PHE K 220      31.292  40.250   4.414  1.00 32.19      K    C
ATOM 4074  CZ  PHE K 220      30.746  41.242   5.198  1.00 32.19      K    C
ATOM 4075  C   PHE K 220      28.708  35.043   5.712  1.00 23.19      K    C
ATOM 4076  O   PHE K 220      28.468  34.551   6.815  1.00 23.19      K    O
ATOM 4077  N   GLY K 221      28.876  34.322   4.603  1.00 38.88      K    N
ATOM 4078  CA  GLY K 221      28.844  32.870   4.600  1.00 38.88      K    C
ATOM 4079  C   GLY K 221      27.780  32.200   5.441  1.00 38.88      K    C
ATOM 4080  O   GLY K 221      26.607  32.166   5.075  1.00 38.88      K    O
ATOM 4081  N   ASP K 222      28.204  31.649   6.572  1.00 40.39      K    N
ATOM 4082  CA  ASP K 222      27.321  30.952   7.493  1.00 40.39      K    C
ATOM 4083  CB  ASP K 222      28.135  30.369   8.647  1.00 91.19      K    C
ATOM 4084  CG  ASP K 222      28.429  28.910   8.467  1.00 91.19      K    C
ATOM 4085  OD1 ASP K 222      29.079  28.324   9.356  1.00 91.19      K    O
ATOM 4086  OD2 ASP K 222      28.006  28.350   7.437  1.00 91.19      K    O
ATOM 4087  C   ASP K 222      26.185  31.761   8.094  1.00 40.39      K    C
ATOM 4088  O   ASP K 222      25.019  31.485   7.835  1.00 40.39      K    O
ATOM 4089  N   GLU K 223      26.534  32.762   8.897  1.00 45.33      K    N
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Figure 8-63

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ATOM 4090  CA  GLU K 223      25.553  33.561   9.626  1.00 45.33      K    C
ATOM 4091  CB  GLU K 223      26.188  34.868  10.111  1.00 46.75      K    C
ATOM 4092  CG  GLU K 223      26.897  35.716   9.080  1.00 46.75      K    C
ATOM 4093  CD  GLU K 223      27.383  37.033   9.686  1.00 46.75      K    C
ATOM 4094  OE1 GLU K 223      28.149  36.997  10.675  1.00 46.75      K    O
ATOM 4095  OE2 GLU K 223      26.995  38.109   9.186  1.00 46.75      K    O
ATOM 4096  C   GLU K 223      24.188  33.850   9.021  1.00 45.33      K    C
ATOM 4097  O   GLU K 223      24.037  33.968   7.808  1.00 45.33      K    O
ATOM 4098  N   LEU K 224      23.194  33.941   9.906  1.00 32.61      K    N
ATOM 4099  CA  LEU K 224      21.806  34.235   9.538  1.00 32.61      K    C
ATOM 4100  CB  LEU K 224      20.845  33.612  10.543  1.00 63.79      K    C
ATOM 4101  CG  LEU K 224      21.093  32.183  11.000  1.00 63.79      K    C
ATOM 4102  CD1 LEU K 224      22.415  32.082  11.756  1.00 63.79      K    C
ATOM 4103  CD2 LEU K 224      19.940  31.774  11.891  1.00 63.79      K    C
ATOM 4104  C   LEU K 224      21.608  35.753   9.555  1.00 32.61      K    C
ATOM 4105  O   LEU K 224      22.117  36.444  10.436  1.00 32.61      K    O
ATOM 4106  N   SER K 225      20.851  36.271   8.598  1.00 37.26      K    N
ATOM 4107  CA  SER K 225      20.643  37.709   8.510  1.00 37.26      K    C
ATOM 4108  CB  SER K 225      19.964  38.059   7.181  1.00 63.89      K    C
ATOM 4109  OG  SER K 225      18.750  37.348   7.030  1.00 63.89      K    O
ATOM 4110  C   SER K 225      19.833  38.254   9.684  1.00 37.26      K    C
ATOM 4111  O   SER K 225      20.008  39.404  10.093  1.00 37.26      K    O
ATOM 4112  N   LEU K 226      18.950  37.423  10.227  1.00 37.60      K    N
ATOM 4113  CA  LEU K 226      18.122  37.835  11.350  1.00 36.37      K    C
ATOM 4114  CB  LEU K 226      16.641  37.560  11.067  1.00 17.92      K    C
ATOM 4115  CG  LEU K 226      15.653  38.099  12.122  1.00 17.92      K    C
ATOM 4116  CD1 LEU K 226      15.608  39.638  12.058  1.00 17.92      K    C
ATOM 4117  CD2 LEU K 226      14.264  37.530  11.874  1.00 17.92      K    C
ATOM 4118  C   LEU K 226      18.522  37.086  12.604  1.00 31.84      K    C
ATOM 4119  O   LEU K 226      18.426  35.869  12.660  1.00 32.61      K    O
ATOM 4120  N   VAL K 227      18.969  37.811  13.615  1.00 38.53      K    N
ATOM 4121  CA  VAL K 227      19.347  37.173  14.860  1.00 33.53      K    C
ATOM 4122  CB  VAL K 227      20.847  37.287  15.105  1.00 44.49      K    C
ATOM 4123  CG1 VAL K 227      21.591  36.638  13.961  1.00 44.49      K    C
ATOM 4124  CG2 VAL K 227      21.244  38.740  15.245  1.00 44.49      K    C
ATOM 4125  C   VAL K 227      18.606  37.842  16.009  1.00 29.36      K    C
ATOM 4126  O   VAL K 227      18.391  39.054  16.001  1.00 20.27      K    O
ATOM 4127  N   THR K 228      18.195  37.067  17.000  1.00 27.92      K    N
ATOM 4128  CA  THR K 228      17.495  37.685  18.103  1.00 29.63      K    C
ATOM 4129  CB  THR K 228      16.389  36.746  18.683  1.00 25.23      K    C
ATOM 4130  OG1 THR K 228      16.836  36.161  19.908  1.00 25.23      K    O
ATOM 4131  CG2 THR K 228      16.025  35.651  17.687  1.00 25.23      K    C
ATOM 4132  C   THR K 228      18.510  38.095  19.181  1.00 27.92      K    C
ATOM 4133  O   THR K 228      19.349  37.298  19.610  1.00 29.94      K    O
ATOM 4134  N   LEU K 229      18.444  39.362  19.579  1.00 36.12      K    N
ATOM 4135  CA  LEU K 229      19.334  39.916  20.596  1.00 32.81      K    C
ATOM 4136  CB  LEU K 229      19.363  41.443  20.493  1.00 19.92      K    C
ATOM 4137  CG  LEU K 229      20.331  42.084  19.480  1.00 19.92      K    C
ATOM 4138  CD1 LEU K 229      20.817  41.065  18.461  1.00 19.92      K    C
ATOM 4139  CD2 LEU K 229      19.640  43.240  18.804  1.00 19.92      K    C
ATOM 4140  C   LEU K 229      18.902  39.509  21.989  1.00 32.70      K    C
ATOM 4141  O   LEU K 229      19.682  38.941  22.750  1.00 33.05      K    O
ATOM 4142  N   PHE K 230      17.654  39.804  22.326  1.00 25.27      K    N
ATOM 4143  CA  PHE K 230      17.123  39.451  23.638  1.00 25.01      K    C
ATOM 4144  CB  PHE K 230      17.096  40.666  24.565  1.00 31.99      K    C
ATOM 4145  CG  PHE K 230      18.202  41.624  24.314  1.00 31.99      K    C
ATOM 4146  CD1 PHE K 230      17.972  42.782  23.584  1.00 31.99      K    C
ATOM 4147  CD2 PHE K 230      19.499  41.336  24.740  1.00 31.99      K    C
ATOM 4148  CE1 PHE K 230      19.020  43.642  23.274  1.00 31.99      K    C
ATOM 4149  CE2 PHE K 230      20.560  42.188  24.436  1.00 31.99      K    C
ATOM 4150  CZ  PHE K 230      20.326  43.341  23.702  1.00 31.99      K    C
ATOM 4151  C   PHE K 230      15.713  38.940  23.472  1.00 26.90      K    C
ATOM 4152  O   PHE K 230      15.051  39.241  22.483  1.00 25.66      K    O
ATOM 4153  N   ARG K 231      15.259  38.152  24.437  1.00 14.68      K    N
ATOM 4154  CA  ARG K 231      13.907  37.643  24.396  1.00 16.52      K    C
ATOM 4155  CB  ARG K 231      13.843  36.261  23.729  1.00 31.89      K    C
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Figure 8-64

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ATOM 4156  CG  ARG K 231      14.534  35.141  24.450  1.00 31.89      K    C
ATOM 4157  CD  ARG K 231      14.684  33.963  23.499  1.00 35.93      K    C
ATOM 4158  NE  ARG K 231      15.099  32.732  24.171  1.00 43.27      K    N
ATOM 4159  CZ  ARG K 231      14.293  31.989  24.916  1.00 53.77      K    C
ATOM 4160  NH1 ARG K 231      13.033  32.351  25.079  1.00 50.00      K    N
ATOM 4161  NH2 ARG K 231      14.745  30.896  25.508  1.00 54.54      K    N
ATOM 4162  C   ARG K 231      13.305  37.624  25.787  1.00 18.66      K    C
ATOM 4163  O   ARG K 231      14.003  37.620  26.805  1.00 21.65      K    O
ATOM 4164  N   CYS K 232      11.985  37.641  25.806  1.00 24.05      K    N
ATOM 4165  CA  CYS K 232      11.221  37.674  27.026  1.00 23.99      K    C
ATOM 4166  C   CYS K 232      10.285  36.489  26.985  1.00 27.45      K    C
ATOM 4167  O   CYS K 232       9.776  36.144  25.929  1.00 28.88      K    O
ATOM 4168  CB  CYS K 232      10.410  38.968  27.048  1.00 45.81      K    C
ATOM 4169  SG  CYS K 232      10.242  39.720  28.685  1.00 45.81      K    S
ATOM 4170  N   ILE K 233      10.055  35.858  28.124  1.00 10.66      K    N
ATOM 4171  CA  ILE K 233       9.137  34.723  28.176  1.00 12.36      K    C
ATOM 4172  CB  ILE K 233       9.886  33.365  28.039  1.00 23.39      K    C
ATOM 4173  CG2 ILE K 233      10.844  33.157  29.219  1.00 23.39      K    C
ATOM 4174  CG1 ILE K 233       8.886  32.212  28.017  1.00 23.39      K    C
ATOM 4175  CD1 ILE K 233       7.950  32.275  26.885  1.00 23.39      K    C
ATOM 4176  C   ILE K 233       8.364  34.747  29.494  1.00 16.84      K    C
ATOM 4177  O   ILE K 233       8.928  34.976  30.572  1.00 17.30      K    O
ATOM 4178  N   GLN K 234       7.069  34.497  29.409  1.00 22.81      K    N
ATOM 4179  CA  GLN K 234       6.241  34.528  30.596  1.00 26.70      K    C
ATOM 4180  CB  GLN K 234       5.564  35.907  30.676  1.00 26.84      K    C
ATOM 4181  CG  GLN K 234       5.027  36.305  32.032  1.00 26.84      K    C
ATOM 4182  CD  GLN K 234       6.116  36.649  33.018  1.00 26.84      K    C
ATOM 4183  OE1 GLN K 234       5.884  36.692  34.230  1.00 26.84      K    O
ATOM 4184  NE2 GLN K 234       7.310  36.896  32.510  1.00 26.84      K    N
ATOM 4185  C   GLN K 234       5.198  33.403  30.535  1.00 27.65      K    C
ATOM 4186  O   GLN K 234       4.583  33.176  29.486  1.00 27.63      K    O
ATOM 4187  N   ASN K 235       5.022  32.679  31.642  1.00 41.22      K    N
ATOM 4188  CA  ASN K 235       4.019  31.615  31.688  1.00 44.66      K    C
ATOM 4189  CB  ASN K 235       4.225  30.693  32.898  1.00 33.60      K    C
ATOM 4190  CG  ASN K 235       5.317  29.662  32.685  1.00 33.60      K    C
ATOM 4191  OD1 ASN K 235       5.285  28.867  31.744  1.00 33.60      K    O
ATOM 4192  ND2 ASN K 235       6.286  29.663  33.577  1.00 33.60      K    N
ATOM 4193  C   ASN K 235       2.668  32.316  31.824  1.00 42.56      K    C
ATOM 4194  O   ASN K 235       2.557  33.336  32.509  1.00 39.87      K    O
ATOM 4195  N   MET K 236       1.648  31.775  31.171  1.00 26.44      K    N
ATOM 4196  CA  MET K 236       0.319  32.371  31.221  1.00 26.44      K    C
ATOM 4197  CB  MET K 236      -0.191  32.641  29.805  1.00 33.60      K    C
ATOM 4198  CG  MET K 236       0.663  33.600  29.001  1.00 33.60      K    C
ATOM 4199  SD  MET K 236       0.679  35.245  29.716  1.00 33.60      K    S
ATOM 4200  CE  MET K 236       2.251  35.198  30.457  1.00 33.60      K    C
ATOM 4201  C   MET K 236      -0.666  31.457  31.940  1.00 26.44      K    C
ATOM 4202  O   MET K 236      -0.590  30.238  31.818  1.00 26.44      K    O
ATOM 4203  N   PRO K 237      -1.612  32.038  32.696  1.00 47.60      K    N
ATOM 4204  CD  PRO K 237      -1.727  33.470  33.034  1.00 26.42      K    C
ATOM 4205  CA  PRO K 237      -2.610  31.257  33.428  1.00 47.60      K    C
ATOM 4206  CB  PRO K 237      -3.042  32.215  34.520  1.00 26.42      K    C
ATOM 4207  CG  PRO K 237      -3.035  33.520  33.801  1.00 26.42      K    C
ATOM 4208  C   PRO K 237      -3.773  30.853  32.531  1.00 47.60      K    C
ATOM 4209  O   PRO K 237      -3.883  31.316  31.393  1.00 47.60      K    O
ATOM 4210  N   GLU K 238      -4.641  29.994  33.056  1.00 51.40      K    N
ATOM 4211  CA  GLU K 238      -5.806  29.515  32.318  1.00 51.40      K    C
ATOM 4212  CB  GLU K 238      -6.426  28.321  33.049  1.00146.37      K    C
ATOM 4213  CG  GLU K 238      -5.562  27.077  33.035  1.00146.37      K    C
ATOM 4214  CD  GLU K 238      -5.430  26.487  31.648  1.00146.37      K    C
ATOM 4215  OE1 GLU K 238      -5.056  27.230  30.715  1.00146.37      K    O
ATOM 4216  OE2 GLU K 238      -5.699  25.278  31.490  1.00146.37      K    O
ATOM 4217  C   GLU K 238      -6.863  30.599  32.133  1.00 51.40      K    C
ATOM 4218  O   GLU K 238      -7.431  30.750  31.052  1.00 51.40      K    O
ATOM 4219  N   THR K 239      -7.120  31.356  33.194  1.00 64.42      K    N
ATOM 4220  CA  THR K 239      -8.121  32.412  33.149  1.00 64.42      K    C
ATOM 4221  CB  THR K 239      -9.203  32.167  34.210  1.00 57.71      K    C
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Figure 8-65

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ATOM 4222  OG1 THR K 239      -8.608  32.184  35.511  1.00 57.71      K    O
ATOM 4223  CG2 THR K 239      -9.858  30.819  33.993  1.00 57.71      K    C
ATOM 4224  C   THR K 239      -7.524  33.799  33.367  1.00 64.42      K    C
ATOM 4225  O   THR K 239      -6.510  33.950  34.051  1.00 64.42      K    O
ATOM 4226  N   LEU K 240      -8.166  34.808  32.780  1.00 43.45      K    N
ATOM 4227  CA  LEU K 240      -7.720  36.193  32.899  1.00 43.45      K    C
ATOM 4228  CB  LEU K 240      -8.058  36.756  34.288  1.00 47.96      K    C
ATOM 4229  CG  LEU K 240      -9.524  36.964  34.652  1.00 47.96      K    C
ATOM 4230  CD1 LEU K 240     -10.186  37.885  33.637  1.00 47.96      K    C
ATOM 4231  CD2 LEU K 240     -10.223  35.627  34.685  1.00 47.96      K    C
ATOM 4232  C   LEU K 240      -6.227  36.368  32.658  1.00 43.45      K    C
ATOM 4233  O   LEU K 240      -5.547  37.048  33.431  1.00 43.45      K    O
ATOM 4234  N   PRO K 241      -5.692  35.766  31.585  1.00 57.61      K    N
ATOM 4235  CD  PRO K 241      -6.353  35.161  30.418  1.00 35.43      K    C
ATOM 4236  CA  PRO K 241      -4.257  35.930  31.340  1.00 53.60      K    C
ATOM 4237  CB  PRO K 241      -4.056  35.215  30.012  1.00 35.43      K    C
ATOM 4238  CG  PRO K 241      -5.358  35.435  29.321  1.00 35.43      K    C
ATOM 4239  C   PRO K 241      -3.930  37.414  31.263  1.00 51.19      K    C
ATOM 4240  O   PRO K 241      -4.549  38.153  30.498  1.00 52.23      K    O
ATOM 4241  N   ASN K 242      -2.956  37.848  32.052  1.00 29.57      K    N
ATOM 4242  CA  ASN K 242      -2.608  39.255  32.077  1.00 26.34      K    C
ATOM 4243  CB  ASN K 242      -3.599  39.978  33.000  1.00 45.83      K    C
ATOM 4244  CG  ASN K 242      -4.037  41.312  32.453  1.00 45.83      K    C
ATOM 4245  OD1 ASN K 242      -5.000  41.904  32.935  1.00 45.83      K    O
ATOM 4246  ND2 ASN K 242      -3.331  41.799  31.444  1.00 45.83      K    N
ATOM 4247  C   ASN K 242      -1.178  39.478  32.550  1.00 23.90      K    C
ATOM 4248  O   ASN K 242      -0.968  39.894  33.688  1.00 24.03      K    O
ATOM 4249  N   ASN K 243      -0.200  39.219  31.685  1.00 51.45      K    N
ATOM 4250  CA  ASN K 243       1.209  39.389  32.055  1.00 48.76      K    C
ATOM 4251  CB  ASN K 243       1.909  38.031  32.123  1.00 28.85      K    C
ATOM 4252  CG  ASN K 243       1.662  37.298  33.425  1.00 28.85      K    C
ATOM 4253  OD1 ASN K 243       1.515  36.071  33.434  1.00 28.85      K    O
ATOM 4254  ND2 ASN K 243       1.633  38.035  34.535  1.00 28.85      K    N
ATOM 4255  C   ASN K 243       2.009  40.261  31.104  1.00 45.89      K    C
ATOM 4256  O   ASN K 243       2.007  40.022  29.902  1.00 45.81      K    O
ATOM 4257  N   SER K 244       2.697  41.266  31.636  1.00 16.66      K    N
ATOM 4258  CA  SER K 244       3.546  42.122  30.807  1.00 16.66      K    C
ATOM 4259  CB  SER K 244       3.534  43.576  31.305  1.00 32.03      K    C
ATOM 4260  OG  SER K 244       4.092  43.719  32.604  1.00 32.03      K    O
ATOM 4261  C   SER K 244       4.965  41.549  30.914  1.00 20.40      K    C
ATOM 4262  O   SER K 244       5.317  40.942  31.925  1.00 25.72      K    O
ATOM 4263  N   CYS K 245       5.776  41.732  29.880  1.00 34.01      K    N
ATOM 4264  CA  CYS K 245       7.134  41.208  29.895  1.00 32.26      K    C
ATOM 4265  C   CYS K 245       8.079  42.262  29.356  1.00 32.82      K    C
ATOM 4266  O   CYS K 245       7.857  42.790  28.273  1.00 30.78      K    O
ATOM 4267  CB  CYS K 245       7.216  39.956  29.020  1.00 51.55      K    C
ATOM 4268  SG  CYS K 245       8.585  38.848  29.474  1.00 51.55      K    S
ATOM 4269  N   TYR K 246       9.132  42.570  30.107  1.00 25.89      K    N
ATOM 4270  CA  TYR K 246      10.117  43.571  29.682  1.00 22.61      K    C
ATOM 4271  CB  TYR K 246      10.090  44.773  30.639  1.00 24.54      K    C
ATOM 4272  CG  TYR K 246      11.220  45.778  30.459  1.00 24.54      K    C
ATOM 4273  CD1 TYR K 246      10.981  47.052  29.937  1.00 24.54      K    C
ATOM 4274  CE1 TYR K 246      12.022  47.988  29.801  1.00 24.54      K    C
ATOM 4275  CD2 TYR K 246      12.529  45.463  30.833  1.00 24.54      K    C
ATOM 4276  CE2 TYR K 246      13.568  46.384  30.698  1.00 24.54      K    C
ATOM 4277  CZ  TYR K 246      13.310  47.643  30.190  1.00 24.54      K    C
ATOM 4278  OH  TYR K 246      14.342  48.560  30.117  1.00 24.54      K    O
ATOM 4279  C   TYR K 246      11.528  42.997  29.642  1.00 21.34      K    C
ATOM 4280  O   TYR K 246      11.922  42.236  30.520  1.00 20.52      K    O
ATOM 4281  N   SER K 247      12.288  43.354  28.619  1.00 27.56      K    N
ATOM 4282  CA  SER K 247      13.665  42.895  28.528  1.00 26.26      K    C
ATOM 4283  CB  SER K 247      13.764  41.544  27.812  1.00 21.67      K    C
ATOM 4284  OG  SER K 247      15.073  41.011  27.927  1.00 21.67      K    O
ATOM 4285  C   SER K 247      14.467  43.941  27.779  1.00 25.48      K    C
ATOM 4286  O   SER K 247      13.949  44.611  26.876  1.00 22.91      K    O
ATOM 4287  N   ALA K 248      15.731  44.089  28.163  1.00 28.25      K    N
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Figure 8-66

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ATOM 4288  CA  ALA K 248      16.597  45.067  27.525  1.00 28.58      K    C
ATOM 4289  CB  ALA K 248      16.483  46.408  28.236  1.00  9.30      K    C
ATOM 4290  C   ALA K 248      18.032  44.602  27.537  1.00 27.29      K    C
ATOM 4291  O   ALA K 248      18.406  43.737  28.311  1.00 23.96      K    O
ATOM 4292  N   GLY K 249      18.834  45.187  26.667  1.00 39.60      K    N
ATOM 4293  CA  GLY K 249      20.228  44.815  26.612  1.00 31.82      K    C
ATOM 4294  C   GLY K 249      20.995  45.789  25.753  1.00 36.05      K    C
ATOM 4295  O   GLY K 249      20.405  46.697  25.163  1.00 33.87      K    O
ATOM 4296  N   ILE K 250      22.310  45.613  25.684  1.00 15.98      K    N
ATOM 4297  CA  ILE K 250      23.135  46.492  24.882  1.00 15.98      K    C
ATOM 4298  CB  ILE K 250      24.313  47.052  25.704  1.00 10.19      K    C
ATOM 4299  CG2 ILE K 250      25.181  47.964  24.833  1.00 10.19      K    C
ATOM 4300  CG1 ILE K 250      23.764  47.821  26.913  1.00 10.19      K    C
ATOM 4301  CD1 ILE K 250      24.810  48.576  27.713  1.00 10.19      K    C
ATOM 4302  C   ILE K 250      23.647  45.671  23.733  1.00 15.98      K    C
ATOM 4303  O   ILE K 250      23.892  44.479  23.888  1.00 16.05      K    O
ATOM 4304  N   ALA K 251      23.779  46.293  22.570  1.00 18.75      K    N
ATOM 4305  CA  ALA K 251      24.289  45.589  21.391  1.00 20.05      K    C
ATOM 4306  CB  ALA K 251      23.177  44.812  20.702  1.00  8.82      K    C
ATOM 4307  C   ALA K 251      24.884  46.577  20.420  1.00 23.26      K    C
ATOM 4308  O   ALA K 251      24.404  47.708  20.302  1.00 22.79      K    O
ATOM 4309  N   LYS K 252      25.939  46.162  19.728  1.00 31.85      K    N
ATOM 4310  CA  LYS K 252      26.559  47.045  18.753  1.00 32.00      K    C
ATOM 4311  CB  LYS K 252      28.057  46.777  18.652  1.00 62.40      K    C
ATOM 4312  CG  LYS K 252      28.773  47.725  17.716  1.00 62.88      K    C
ATOM 4313  CD  LYS K 252      30.265  47.707  17.989  1.00 62.88      K    C
ATOM 4314  CE  LYS K 252      31.029  48.600  17.028  1.00 62.88      K    C
ATOM 4315  NZ  LYS K 252      30.951  48.079  15.636  1.00 62.88      K    N
ATOM 4316  C   LYS K 252      25.877  46.808  17.409  1.00 32.62      K    C
ATOM 4317  O   LYS K 252      25.845  45.692  16.902  1.00 35.50      K    O
ATOM 4318  N   LEU K 253      25.294  47.863  16.859  1.00 40.54      K    N
ATOM 4319  CA  LEU K 253      24.603  47.780  15.581  1.00 40.27      K    C
ATOM 4320  CB  LEU K 253      23.193  48.363  15.707  1.00 32.50      K    C
ATOM 4321  CG  LEU K 253      22.065  47.602  16.406  1.00 34.04      K    C
ATOM 4322  CD1 LEU K 253      22.600  46.433  17.216  1.00 28.84      K    C
ATOM 4323  CD2 LEU K 253      21.288  48.601  17.259  1.00 30.34      K    C
ATOM 4324  C   LEU K 253      25.364  48.552  14.505  1.00 41.63      K    C
ATOM 4325  O   LEU K 253      26.049  49.531  14.804  1.00 39.21      K    O
ATOM 4326  N   GLU K 254      25.237  48.107  13.257  1.00 33.92      K    N
ATOM 4327  CA  GLU K 254      25.897  48.762  12.137  1.00 35.59      K    C
ATOM 4328  CB  GLU K 254      26.514  47.745  11.189  1.00129.64      K    C
ATOM 4329  CG  GLU K 254      27.751  47.072  11.698  1.00 98.93      K    C
ATOM 4330  CD  GLU K 254      28.450  46.313  10.595  1.00 98.93      K    C
ATOM 4331  OE1 GLU K 254      28.875  46.955   9.613  1.00 98.93      K    O
ATOM 4332  OE2 GLU K 254      28.570  45.076  10.699  1.00 98.93      K    O
ATOM 4333  C   GLU K 254      24.882  49.570  11.359  1.00 36.38      K    C
ATOM 4334  O   GLU K 254      23.707  49.191  11.276  1.00 36.10      K    O
ATOM 4335  N   GLU K 255      25.332  50.683  10.782  1.00 41.83      K    N
ATOM 4336  CA  GLU K 255      24.436  51.513   9.991  1.00 40.73      K    C
ATOM 4337  CB  GLU K 255      25.201  52.628   9.291  1.00 53.38      K    C
ATOM 4338  CG  GLU K 255      24.360  53.358   8.264  1.00 53.38      K    C
ATOM 4339  CD  GLU K 255      25.130  54.431   7.533  1.00 53.38      K    C
ATOM 4340  OE1 GLU K 255      24.530  55.088   6.654  1.00 53.38      K    O
ATOM 4341  OE2 GLU K 255      26.330  54.619   7.837  1.00 53.38      K    O
ATOM 4342  C   GLU K 255      23.790  50.626   8.944  1.00 43.18      K    C
ATOM 4343  O   GLU K 255      24.474  49.899   8.232  1.00 46.41      K    O
ATOM 4344  N   GLY K 256      22.470  50.675   8.856  1.00 22.38      K    N
ATOM 4345  CA  GLY K 256      21.780  49.852   7.883  1.00 22.38      K    C
ATOM 4346  C   GLY K 256      20.987  48.765   8.568  1.00 22.38      K    C
ATOM 4347  O   GLY K 256      20.009  48.261   8.007  1.00 22.38      K    O
ATOM 4348  N   ASP K 257      21.410  48.395   9.777  1.00 27.91      K    N
ATOM 4349  CA  ASP K 257      20.716  47.357  10.533  1.00 31.19      K    C
ATOM 4350  CB  ASP K 257      21.472  47.007  11.821  1.00 41.60      K    C
ATOM 4351  CG  ASP K 257      22.726  46.217  11.567  1.00 41.60      K    C
ATOM 4352  OD1 ASP K 257      22.812  45.574  10.496  1.00 41.60      K    O
ATOM 4353  OD2 ASP K 257      23.610  46.226  12.452  1.00 41.60      K    O
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Figure 8-67

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ATOM 4354  C   ASP K 257      19.322  47.818  10.916  1.00 30.98      K    C
ATOM 4355  O   ASP K 257      19.038  49.014  10.945  1.00 35.44      K    O
ATOM 4356  N   GLU K 258      18.459  46.854  11.209  1.00 25.30      K    N
ATOM 4357  CA  GLU K 258      17.091  47.137  11.635  1.00 21.96      K    C
ATOM 4358  CB  GLU K 258      16.085  46.804  10.526  1.00 50.60      K    C
ATOM 4359  CG  GLU K 258      16.061  47.793   9.364  1.00 50.60      K    C
ATOM 4360  CD  GLU K 258      15.054  47.401   8.289  1.00 50.60      K    C
ATOM 4361  OE1 GLU K 258      14.775  48.216   7.384  1.00 50.60      K    O
ATOM 4362  OE2 GLU K 258      14.540  46.268   8.340  1.00 50.60      K    O
ATOM 4363  C   GLU K 258      16.780  46.305  12.873  1.00 20.67      K    C
ATOM 4364  O   GLU K 258      17.296  45.197  13.035  1.00 20.67      K    O
ATOM 4365  N   LEU K 259      15.968  46.859  13.763  1.00 39.71      K    N
ATOM 4366  CA  LEU K 259      15.563  46.156  14.974  1.00 36.18      K    C
ATOM 4367  CB  LEU K 259      15.901  46.987  16.216  1.00 18.49      K    C
ATOM 4368  CG  LEU K 259      17.374  47.299  16.516  1.00 18.49      K    C
ATOM 4369  CD1 LEU K 259      17.435  48.297  17.642  1.00 18.49      K    C
ATOM 4370  CD2 LEU K 259      18.145  46.030  16.897  1.00 18.49      K    C
ATOM 4371  C   LEU K 259      14.051  45.978  14.865  1.00 33.52      K    C
ATOM 4372  O   LEU K 259      13.346  46.900  14.448  1.00 37.60      K    O
ATOM 4373  N   GLN K 260      13.548  44.799  15.209  1.00 22.66      K    N
ATOM 4374  CA  GLN K 260      12.111  44.545  15.138  1.00 21.42      K    C
ATOM 4375  CB  GLN K 260      11.771  43.778  13.862  1.00 25.04      K    C
ATOM 4376  CG  GLN K 260      12.099  42.289  13.940  1.00 25.04      K    C
ATOM 4377  CD  GLN K 260      11.929  41.559  12.610  1.00 25.04      K    C
ATOM 4378  OE1 GLN K 260      11.930  40.319  12.559  1.00 25.04      K    O
ATOM 4379  NE2 GLN K 260      11.798  42.322  11.525  1.00 25.04      K    N
ATOM 4380  C   GLN K 260      11.698  43.713  16.348  1.00 21.41      K    C
ATOM 4381  O   GLN K 260      12.492  42.934  16.873  1.00 18.94      K    O
ATOM 4382  N   LEU K 261      10.462  43.873  16.798  1.00 30.02      K    N
ATOM 4383  CA  LEU K 261       9.984  43.109  17.943  1.00 30.33      K    C
ATOM 4384  CB  LEU K 261       9.313  44.043  18.955  1.00 17.71      K    C
ATOM 4385  CG  LEU K 261       9.014  43.414  20.316  1.00 17.71      K    C
ATOM 4386  CD1 LEU K 261       8.872  44.517  21.363  1.00 17.71      K    C
ATOM 4387  CD2 LEU K 261       7.764  42.550  20.237  1.00 17.71      K    C
ATOM 4388  C   LEU K 261       8.999  42.066  17.429  1.00 34.00      K    C
ATOM 4389  O   LEU K 261       7.957  42.408  16.877  1.00 34.67      K    O
ATOM 4390  N   ALA K 262       9.324  40.793  17.613  1.00 22.79      K    N
ATOM 4391  CA  ALA K 262       8.464  39.730  17.113  1.00 25.19      K    C
ATOM 4392  CB  ALA K 262       9.190  38.962  16.032  1.00 16.00      K    C
ATOM 4393  C   ALA K 262       7.939  38.753  18.157  1.00 24.49      K    C
ATOM 4394  O   ALA K 262       8.665  38.334  19.067  1.00 24.52      K    O
ATOM 4395  N   ILE K 263       6.668  38.385  18.010  1.00 28.32      K    N
ATOM 4396  CA  ILE K 263       6.028  37.432  18.908  1.00 27.36      K    C
ATOM 4397  CB  ILE K 263       4.664  37.949  19.379  1.00 11.63      K    C
ATOM 4398  CG2 ILE K 263       4.000  36.899  20.252  1.00 11.63      K    C
ATOM 4399  CG1 ILE K 263       4.845  39.264  20.149  1.00 11.63      K    C
ATOM 4400  CD1 ILE K 263       3.549  39.986  20.472  1.00 11.63      K    C
ATOM 4401  C   ILE K 263       5.855  36.117  18.143  1.00 25.68      K    C
ATOM 4402  O   ILE K 263       5.130  36.049  17.152  1.00 25.43      K    O
ATOM 4403  N   PRO K 264       6.539  35.057  18.597  1.00 40.18      K    N
ATOM 4404  CD  PRO K 264       7.480  35.096  19.724  1.00 31.41      K    C
ATOM 4405  CA  PRO K 264       6.519  33.717  18.000  1.00 40.18      K    C
ATOM 4406  CB  PRO K 264       7.673  33.005  18.698  1.00 31.41      K    C
ATOM 4407  CG  PRO K 264       8.511  34.130  19.263  1.00 31.41      K    C
ATOM 4408  C   PRO K 264       5.224  32.985  18.227  1.00 40.18      K    C
ATOM 4409  O   PRO K 264       5.222  31.911  18.817  1.00 40.18      K    O
ATOM 4410  N   ARG K 265       4.130  33.555  17.745  1.00 45.96      K    N
ATOM 4411  CA  ARG K 265       2.825  32.950  17.923  1.00 45.96      K    C
ATOM 4412  CB  ARG K 265       2.317  33.303  19.317  1.00 73.57      K    C
ATOM 4413  CG  ARG K 265       0.925  32.836  19.631  1.00 73.57      K    C
ATOM 4414  CD  ARG K 265       0.898  31.380  19.991  1.00 73.57      K    C
ATOM 4415  NE  ARG K 265      -0.468  30.948  20.245  1.00 73.57      K    N
ATOM 4416  CZ  ARG K 265      -0.803  29.717  20.612  1.00 73.57      K    C
ATOM 4417  NH1 ARG K 265       0.137  28.795  20.770  1.00 73.57      K    N
ATOM 4418  NH2 ARG K 265      -2.078  29.406  20.814  1.00 73.57      K    N
ATOM 4419  C   ARG K 265       1.875  33.493  16.860  1.00 45.96      K    C
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Figure 8-68

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ATOM 4420  O   ARG K 265      1.937  34.678  16.528  1.00 45.96      K    O
ATOM 4421  N   GLU K 266      1.016  32.636  16.303  1.00 40.17      K    N
ATOM 4422  CA  GLU K 266      0.053  33.106  15.312  1.00 40.17      K    C
ATOM 4423  CB  GLU K 266     -0.477  31.944  14.477  1.00 88.42      K    C
ATOM 4424  CG  GLU K 266      0.515  31.474  13.430  1.00 88.42      K    C
ATOM 4425  CD  GLU K 266     -0.037  30.383  12.543  1.00 88.42      K    C
ATOM 4426  OE1 GLU K 266     -1.130  30.571  11.972  1.00 88.42      K    O
ATOM 4427  OE2 GLU K 266      0.627  29.338  12.411  1.00 88.42      K    O
ATOM 4428  C   GLU K 266     -1.075  33.801  16.069  1.00 40.17      K    C
ATOM 4429  O   GLU K 266     -1.664  33.232  16.986  1.00 40.17      K    O
ATOM 4430  N   ASN K 267     -1.353  35.046  15.702  1.00 31.16      K    N
ATOM 4431  CA  ASN K 267     -2.387  35.806  16.381  1.00 31.16      K    C
ATOM 4432  CB  ASN K 267     -3.761  35.212  16.078  1.00 43.27      K    C
ATOM 4433  CG  ASN K 267     -4.073  35.231  14.591  1.00 43.27      K    C
ATOM 4434  OD1 ASN K 267     -3.572  34.396  13.836  1.00 43.27      K    O
ATOM 4435  ND2 ASN K 267     -4.882  36.208  14.157  1.00 43.27      K    N
ATOM 4436  C   ASN K 267     -2.094  35.796  17.873  1.00 31.16      K    C
ATOM 4437  O   ASN K 267     -2.824  35.219  18.666  1.00 31.16      K    O
ATOM 4438  N   ALA K 268     -1.001  36.458  18.226  1.00 67.72      K    N
ATOM 4439  CA  ALA K 268     -0.526  36.552  19.595  1.00 67.72      K    C
ATOM 4440  CB  ALA K 268      0.465  37.699  19.713  1.00 81.29      K    C
ATOM 4441  C   ALA K 268     -1.581  36.693  20.679  1.00 67.72      K    C
ATOM 4442  O   ALA K 268     -1.714  35.819  21.535  1.00 67.72      K    O
ATOM 4443  N   GLN K 269     -2.322  37.794  20.647  1.00 38.15      K    N
ATOM 4444  CA  GLN K 269     -3.328  38.085  21.668  1.00 36.08      K    C
ATOM 4445  CB  GLN K 269     -3.845  36.800  22.319  1.00 74.91      K    C
ATOM 4446  CG  GLN K 269     -5.282  36.866  22.757  1.00 67.56      K    C
ATOM 4447  CD  GLN K 269     -6.200  37.249  21.612  1.00 67.56      K    C
ATOM 4448  OE1 GLN K 269     -6.011  36.809  20.476  1.00 67.56      K    O
ATOM 4449  NE2 GLN K 269     -7.207  38.068  21.908  1.00 67.56      K    N
ATOM 4450  C   GLN K 269     -2.595  38.939  22.711  1.00 36.77      K    C
ATOM 4451  O   GLN K 269     -2.352  38.503  23.834  1.00 35.36      K    O
ATOM 4452  N   ILE K 270     -2.239  40.158  22.316  1.00 33.29      K    N
ATOM 4453  CA  ILE K 270     -1.511  41.071  23.182  1.00 31.50      K    C
ATOM 4454  CB  ILE K 270     -0.248  41.522  22.486  1.00 24.79      K    C
ATOM 4455  CG2 ILE K 270      0.590  40.307  22.146  1.00 28.35      K    C
ATOM 4456  CG1 ILE K 270     -0.593  42.243  21.190  1.00 28.35      K    C
ATOM 4457  CD1 ILE K 270      0.612  42.856  20.508  1.00 24.79      K    C
ATOM 4458  C   ILE K 270     -2.334  42.283  23.606  1.00 31.14      K    C
ATOM 4459  O   ILE K 270     -3.550  42.263  23.496  1.00 29.12      K    O
ATOM 4460  N   SER K 271     -1.698  43.353  24.069  1.00 45.58      K    N
ATOM 4461  CA  SER K 271     -2.487  44.482  24.534  1.00 46.24      K    C
ATOM 4462  CB  SER K 271     -2.010  44.923  25.911  1.00 34.91      K    C
ATOM 4463  OG  SER K 271     -2.939  45.829  26.494  1.00 29.67      K    O
ATOM 4464  C   SER K 271     -2.643  45.714  23.665  1.00 43.55      K    C
ATOM 4465  O   SER K 271     -3.688  46.360  23.712  1.00 44.91      K    O
ATOM 4466  N   LEU K 272     -1.636  46.072  22.884  1.00 18.55      K    N
ATOM 4467  CA  LEU K 272     -1.766  47.267  22.026  1.00 17.05      K    C
ATOM 4468  CB  LEU K 272     -2.905  47.105  21.010  1.00 12.55      K    C
ATOM 4469  CG  LEU K 272     -2.685  46.226  19.786  1.00 21.70      K    C
ATOM 4470  CD1 LEU K 272     -1.625  46.832  18.931  1.00 21.70      K    C
ATOM 4471  CD2 LEU K 272     -2.279  44.843  20.210  1.00 21.70      K    C
ATOM 4472  C   LEU K 272     -1.993  48.575  22.804  1.00 23.41      K    C
ATOM 4473  O   LEU K 272     -2.244  49.630  22.215  1.00 21.81      K    O
ATOM 4474  N   ASP K 273     -1.907  48.501  24.126  1.00 37.90      K    N
ATOM 4475  CA  ASP K 273     -2.061  49.678  24.971  1.00 33.07      K    C
ATOM 4476  CB  ASP K 273     -2.429  49.229  26.382  1.00 68.43      K    C
ATOM 4477  CG  ASP K 273     -3.544  50.046  26.978  1.00 68.43      K    C
ATOM 4478  OD1 ASP K 273     -4.582  50.196  26.303  1.00 68.43      K    O
ATOM 4479  OD2 ASP K 273     -3.381  50.530  28.120  1.00 68.43      K    O
ATOM 4480  C   ASP K 273     -0.695  50.392  24.961  1.00 34.73      K    C
ATOM 4481  O   ASP K 273      0.290  49.872  25.496  1.00 38.06      K    O
ATOM 4482  N   GLY K 274     -0.641  51.572  24.349  1.00 69.80      K    N
ATOM 4483  CA  GLY K 274      0.606  52.321  24.239  1.00 69.80      K    C
ATOM 4484  C   GLY K 274      1.542  52.457  25.429  1.00 69.80      K    C
ATOM 4485  O   GLY K 274      2.736  52.701  25.267  1.00 69.80      K    O
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Figure 8-69

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ATOM 4486  N   ASP K 275      1.005  52.293  26.627  1.00 37.82      K    N
ATOM 4487  CA  ASP K 275      1.789  52.419  27.856  1.00 37.82      K    C
ATOM 4488  CB  ASP K 275      0.984  53.193  28.896  1.00 30.56      K    C
ATOM 4489  CG  ASP K 275     -0.245  52.425  29.357  1.00 30.56      K    C
ATOM 4490  OD1 ASP K 275     -0.508  51.331  28.807  1.00 30.56      K    O
ATOM 4491  OD2 ASP K 275     -0.951  52.912  30.263  1.00 30.56      K    O
ATOM 4492  C   ASP K 275      2.197  51.077  28.475  1.00 37.82      K    C
ATOM 4493  O   ASP K 275      2.701  51.029  29.605  1.00 37.82      K    O
ATOM 4494  N   VAL K 276      1.964  49.987  27.760  1.00 30.18      K    N
ATOM 4495  CA  VAL K 276      2.328  48.700  28.305  1.00 29.29      K    C
ATOM 4496  CB  VAL K 276      1.080  47.957  28.863  1.00 18.61      K    C
ATOM 4497  CG1 VAL K 276      0.206  47.443  27.724  1.00 18.61      K    C
ATOM 4498  CG2 VAL K 276      1.523  46.822  29.779  1.00 18.61      K    C
ATOM 4499  C   VAL K 276      3.038  47.863  27.245  1.00 27.40      K    C
ATOM 4500  O   VAL K 276      3.737  46.907  27.560  1.00 27.79      K    O
ATOM 4501  N   THR K 277      2.862  48.237  25.986  1.00 24.18      K    N
ATOM 4502  CA  THR K 277      3.516  47.551  24.871  1.00 24.27      K    C
ATOM 4503  CB  THR K 277      2.488  46.859  23.946  1.00 14.76      K    C
ATOM 4504  OG1 THR K 277      1.837  45.809  24.665  1.00 15.49      K    O
ATOM 4505  CG2 THR K 277      3.173  46.281  22.721  1.00 16.19      K    C
ATOM 4506  C   THR K 277      4.298  48.597  24.064  1.00 22.54      K    C
ATOM 4507  O   THR K 277      3.732  49.318  23.247  1.00 24.72      K    O
ATOM 4508  N   PHE K 278      5.597  48.685  24.314  1.00 25.17      K    N
ATOM 4509  CA  PHE K 278      6.456  49.650  23.634  1.00 19.34      K    C
ATOM 4510  CB  PHE K 278      6.673  50.874  24.520  1.00 18.76      K    C
ATOM 4511  CG  PHE K 278      6.989  50.538  25.943  1.00 18.76      K    C
ATOM 4512  CD1 PHE K 278      8.307  50.426  26.373  1.00 18.76      K    C
ATOM 4513  CD2 PHE K 278      5.961  50.299  26.855  1.00 18.76      K    C
ATOM 4514  CE1 PHE K 278      8.597  50.082  27.691  1.00 18.76      K    C
ATOM 4515  CE2 PHE K 278      6.241  49.955  28.167  1.00 18.76      K    C
ATOM 4516  CZ  PHE K 278      7.564  49.845  28.587  1.00 18.76      K    C
ATOM 4517  C   PHE K 278      7.794  49.040  23.256  1.00 21.80      K    C
ATOM 4518  O   PHE K 278      8.191  48.000  23.772  1.00 26.96      K    O
ATOM 4519  N   PHE K 279      8.497  49.718  22.366  1.00 34.68      K    N
ATOM 4520  CA  PHE K 279      9.766  49.240  21.847  1.00 34.08      K    C
ATOM 4521  CB  PHE K 279      9.467  48.567  20.507  1.00 30.27      K    C
ATOM 4522  CG  PHE K 279     10.646  47.954  19.844  1.00 27.34      K    C
ATOM 4523  CD1 PHE K 279     11.654  47.356  20.583  1.00 29.82      K    C
ATOM 4524  CD2 PHE K 279     10.719  47.915  18.455  1.00 24.74      K    C
ATOM 4525  CE1 PHE K 279     12.720  46.721  19.938  1.00 30.11      K    C
ATOM 4526  CE2 PHE K 279     11.778  47.284  17.805  1.00 25.48      K    C
ATOM 4527  CZ  PHE K 279     12.779  46.687  18.539  1.00 27.89      K    C
ATOM 4528  C   PHE K 279     10.655  50.462  21.684  1.00 38.06      K    C
ATOM 4529  O   PHE K 279     10.193  51.500  21.210  1.00 35.57      K    O
ATOM 4530  N   GLY K 280     11.918  50.364  22.086  1.00 25.30      K    N
ATOM 4531  CA  GLY K 280     12.790  51.524  21.966  1.00 25.99      K    C
ATOM 4532  C   GLY K 280     14.285  51.266  21.947  1.00 25.87      K    C
ATOM 4533  O   GLY K 280     14.756  50.199  22.346  1.00 25.54      K    O
ATOM 4534  N   ALA K 281     15.038  52.257  21.479  1.00 20.30      K    N
ATOM 4535  CA  ALA K 281     16.492  52.151  21.398  1.00 20.30      K    C
ATOM 4536  CB  ALA K 281     16.908  51.739  20.000  1.00 13.52      K    C
ATOM 4537  C   ALA K 281     17.137  53.477  21.761  1.00 20.30      K    C
ATOM 4538  O   ALA K 281     16.704  54.536  21.307  1.00 20.30      K    O
ATOM 4539  N   LEU K 282     18.176  53.403  22.582  1.00 31.05      K    N
ATOM 4540  CA  LEU K 282     18.900  54.584  23.041  1.00 28.94      K    C
ATOM 4541  CB  LEU K 282     18.775  54.707  24.559  1.00 21.23      K    C
ATOM 4542  CG  LEU K 282     19.221  55.989  25.264  1.00 25.23      K    C
ATOM 4543  CD1 LEU K 282     19.085  55.783  26.755  1.00 21.66      K    C
ATOM 4544  CD2 LEU K 282     20.644  56.326  24.932  1.00 27.13      K    C
ATOM 4545  C   LEU K 282     20.361  54.399  22.663  1.00 29.81      K    C
ATOM 4546  O   LEU K 282     20.952  53.364  22.971  1.00 29.14      K    O
ATOM 4547  N   LYS K 283     20.948  55.394  22.001  1.00 31.10      K    N
ATOM 4548  CA  LYS K 283     22.347  55.277  21.613  1.00 32.61      K    C
ATOM 4549  CB  LYS K 283     22.664  56.120  20.383  1.00 45.92      K    C
ATOM 4550  CG  LYS K 283     24.085  55.891  19.920  1.00 49.59      K    C
ATOM 4551  CD  LYS K 283     24.416  56.644  18.665  1.00 44.44      K    C
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Figure 8-70

ATOM	4552	CE	LYS	K	283	25.802	56.267	18.193	1.00	43.84	K C
ATOM	4553	NZ	LYS	K	283	26.176	57.024	16.971	1.00	45.76	K N
ATOM	4554	C	LYS	K	283	23.297	55.669	22.733	1.00	35.64	K C
ATOM	4555	O	LYS	K	283	23.272	56.795	23.220	1.00	34.71	K O
ATOM	4556	N	LEU	K	284	24.131	54.723	23.140	1.00	35.77	K N
ATOM	4557	CA	LEU	K	284	25.100	54.968	24.193	1.00	39.12	K C
ATOM	4558	CB	LEU	K	284	25.743	53.655	24.625	1.00	27.14	K C
ATOM	4559	CG	LEU	K	284	24.719	52.709	25.254	1.00	24.43	K C
ATOM	4560	CD1	LEU	K	284	25.377	51.390	25.670	1.00	22.37	K C
ATOM	4561	CD2	LEU	K	284	24.097	53.409	26.455	1.00	25.81	K C
ATOM	4562	C	LEU	K	284	26.160	55.922	23.679	1.00	41.79	K C
ATOM	4563	O	LEU	K	284	26.671	55.754	22.573	1.00	43.58	K O
ATOM	4564	N	LEU	K	285	26.476	56.932	24.481	1.00	54.99	K N
ATOM	4565	CA	LEU	K	285	27.473	57.922	24.104	1.00	54.99	K C
ATOM	4566	CB	LEU	K	285	27.542	59.022	25.154	1.00	75.74	K C
ATOM	4567	CG	LEU	K	285	27.967	60.366	24.585	1.00	75.74	K C
ATOM	4568	CD1	LEU	K	285	26.854	60.905	23.703	1.00	75.74	K C
ATOM	4569	CD2	LEU	K	285	28.251	61.328	25.715	1.00	75.74	K C
ATOM	4570	C	LEU	K	285	28.836	57.258	23.970	1.00	54.99	K C
ATOM	4571	O	LEU	K	285	29.598	57.631	23.056	1.00	56.45	K O
ATOM	4572	OXT	LEU	K	285	29.127	56.375	24.797	1.00	61.60	K O
ATOM	4573	CB	VAL	L	142	29.537	67.035	31.155	1.00	74.50	L C
ATOM	4574	CG1	VAL	L	142	29.631	67.903	29.915	1.00	74.50	L C
ATOM	4575	CG2	VAL	L	142	29.892	67.844	32.413	1.00	74.50	L C
ATOM	4576	C	VAL	L	142	28.144	65.373	32.363	1.00	65.62	L C
ATOM	4577	O	VAL	L	142	28.941	64.440	32.288	1.00	65.62	L O
ATOM	4578	N	VAL	L	142	27.116	67.518	31.591	1.00	65.62	L N
ATOM	4579	CA	VAL	L	142	28.110	66.450	31.283	1.00	65.62	L C
ATOM	4580	N	THR	L	143	27.275	65.492	33.361	1.00	65.43	L N
ATOM	4581	CA	THR	L	143	27.270	64.527	34.449	1.00	65.43	L C
ATOM	4582	CB	THR	L	143	27.337	65.228	35.803	1.00	95.47	L C
ATOM	4583	OG1	THR	L	143	26.319	66.229	35.858	1.00	95.47	L O
ATOM	4584	CG2	THR	L	143	28.695	65.873	36.010	1.00	95.47	L C
ATOM	4585	C	THR	L	143	26.091	63.574	34.477	1.00	65.43	L C
ATOM	4586	O	THR	L	143	26.095	62.622	35.250	1.00	65.43	L O
ATOM	4587	N	GLN	L	144	25.075	63.823	33.662	1.00	55.38	L N
ATOM	4588	CA	GLN	L	144	23.916	62.925	33.622	1.00	46.00	L C
ATOM	4589	CB	GLN	L	144	24.343	61.574	33.027	1.00	78.99	L C
ATOM	4590	CG	GLN	L	144	23.262	60.846	32.252	1.00	78.99	L C
ATOM	4591	CD	GLN	L	144	23.775	59.605	31.532	1.00	78.99	L C
ATOM	4592	OE1	GLN	L	144	23.083	59.023	30.699	1.00	26.20	L O
ATOM	4593	NE2	GLN	L	144	24.986	59.190	31.858	1.00	26.20	L N
ATOM	4594	C	GLN	L	144	23.276	62.717	35.011	1.00	43.19	L C
ATOM	4595	O	GLN	L	144	23.541	61.721	35.685	1.00	38.27	L O
ATOM	4596	N	ASP	L	145	22.428	63.654	35.435	1.00	33.58	L N
ATOM	4597	CA	ASP	L	145	21.772	63.549	36.738	1.00	33.29	L C
ATOM	4598	CB	ASP	L	145	20.934	64.792	37.047	1.00	39.82	L C
ATOM	4599	CG	ASP	L	145	21.710	66.079	36.906	1.00	57.73	L C
ATOM	4600	OD1	ASP	L	145	22.873	66.129	37.352	1.00	57.73	L O
ATOM	4601	OD2	ASP	L	145	21.145	67.052	36.361	1.00	57.73	L O
ATOM	4602	C	ASP	L	145	20.846	62.349	36.837	1.00	31.33	L C
ATOM	4603	O	ASP	L	145	20.359	61.827	35.828	1.00	30.30	L O
ATOM	4604	N	CYS	L	146	20.588	61.932	38.070	1.00	16.30	L N
ATOM	4605	CA	CYS	L	146	19.695	60.810	38.330	1.00	15.87	L C
ATOM	4606	CB	CYS	L	146	20.351	59.502	37.895	1.00	28.85	L C
ATOM	4607	SG	CYS	L	146	21.945	59.220	38.696	1.00	40.17	L S
ATOM	4608	C	CYS	L	146	19.337	60.730	39.812	1.00	17.24	L C
ATOM	4609	O	CYS	L	146	20.121	61.115	40.673	1.00	15.16	L O
ATOM	4610	N	LEU	L	147	18.146	60.225	40.098	1.00	22.28	L N
ATOM	4611	CA	LEU	L	147	17.689	60.090	41.470	1.00	22.28	L C
ATOM	4612	CB	LEU	L	147	16.745	61.235	41.820	1.00	20.33	L C
ATOM	4613	CG	LEU	L	147	16.067	61.176	43.183	1.00	20.33	L C
ATOM	4614	CD1	LEU	L	147	15.678	62.581	43.586	1.00	24.86	L C
ATOM	4615	CD2	LEU	L	147	14.850	60.265	43.134	1.00	24.86	L C
ATOM	4616	C	LEU	L	147	16.975	58.760	41.615	1.00	22.28	L C
ATOM	4617	O	LEU	L	147	16.249	58.327	40.715	1.00	23.44	L O

Figure 8-71

ATOM	4618	N	GLN	L	148	17.173	58.113	42.754	1.00	28.12	L N
ATOM	4619	CA	GLN	L	148	16.561	56.816	42.980	1.00	28.14	L C
ATOM	4620	CB	GLN	L	148	17.613	55.722	42.799	1.00	17.58	L C
ATOM	4621	CG	GLN	L	148	17.112	54.295	42.902	1.00	25.04	L C
ATOM	4622	CD	GLN	L	148	18.182	53.290	42.483	1.00	25.04	L C
ATOM	4623	OE1	GLN	L	148	18.260	52.887	41.319	1.00	25.04	L O
ATOM	4624	NE2	GLN	L	148	19.029	52.902	43.430	1.00	25.04	L N
ATOM	4625	C	GLN	L	148	15.922	56.689	44.350	1.00	29.26	L C
ATOM	4626	O	GLN	L	148	16.496	57.095	45.359	1.00	29.77	L O
ATOM	4627	N	LEU	L	149	14.726	56.115	44.366	1.00	29.43	L N
ATOM	4628	CA	LEU	L	149	13.975	55.902	45.594	1.00	28.16	L C
ATOM	4629	CB	LEU	L	149	12.573	56.511	45.456	1.00	21.45	L C
ATOM	4630	CG	LEU	L	149	12.261	57.985	45.759	1.00	21.45	L C
ATOM	4631	CD1	LEU	L	149	13.525	58.811	45.905	1.00	21.45	L C
ATOM	4632	CD2	LEU	L	149	11.367	58.528	44.651	1.00	8.75	L C
ATOM	4633	C	LEU	L	149	13.851	54.401	45.865	1.00	29.81	L C
ATOM	4634	O	LEU	L	149	13.759	53.591	44.932	1.00	30.20	L O
ATOM	4635	N	ILE	L	150	13.859	54.031	47.143	1.00	24.30	L N
ATOM	4636	CA	ILE	L	150	13.710	52.627	47.522	1.00	23.17	L C
ATOM	4637	CB	ILE	L	150	15.028	52.033	48.038	1.00	11.50	L C
ATOM	4638	CG2	ILE	L	150	16.106	52.189	46.982	1.00	11.50	L C
ATOM	4639	CG1	ILE	L	150	15.454	52.737	49.321	1.00	15.62	L C
ATOM	4640	CD1	ILE	L	150	16.799	52.320	49.798	1.00	15.62	L C
ATOM	4641	C	ILE	L	150	12.655	52.535	48.614	1.00	27.27	L C
ATOM	4642	O	ILE	L	150	12.528	53.435	49.447	1.00	28.32	L O
ATOM	4643	N	ALA	L	151	11.892	51.452	48.599	1.00	35.20	L N
ATOM	4644	CA	ALA	L	151	10.832	51.256	49.572	1.00	35.20	L C
ATOM	4645	CB	ALA	L	151	10.215	49.887	49.388	1.00	20.93	L C
ATOM	4646	C	ALA	L	151	11.296	51.436	51.018	1.00	35.20	L C
ATOM	4647	O	ALA	L	151	12.410	51.058	51.388	1.00	35.20	L O
ATOM	4648	N	ASP	L	152	10.428	52.032	51.829	1.00	42.50	L N
ATOM	4649	CA	ASP	L	152	10.713	52.266	53.235	1.00	42.50	L C
ATOM	4650	CB	ASP	L	152	10.197	53.643	53.645	1.00	55.13	L C
ATOM	4651	CG	ASP	L	152	10.400	53.926	55.112	1.00	55.13	L C
ATOM	4652	OD1	ASP	L	152	9.883	54.954	55.594	1.00	55.13	L O
ATOM	4653	OD2	ASP	L	152	11.078	53.122	55.781	1.00	55.13	L O
ATOM	4654	C	ASP	L	152	9.998	51.185	54.034	1.00	42.50	L C
ATOM	4655	O	ASP	L	152	8.796	51.273	54.277	1.00	42.50	L O
ATOM	4656	N	SER	L	153	10.739	50.164	54.440	1.00	49.91	L N
ATOM	4657	CA	SER	L	153	10.162	49.057	55.196	1.00	49.91	L C
ATOM	4658	CB	SER	L	153	11.171	47.919	55.282	1.00	44.20	L C
ATOM	4659	OG	SER	L	153	12.399	48.395	55.796	1.00	44.20	L O
ATOM	4660	C	SER	L	153	9.737	49.452	56.602	1.00	49.91	L C
ATOM	4661	O	SER	L	153	9.232	48.629	57.357	1.00	49.91	L O
ATOM	4662	N	GLU	L	154	9.935	50.717	56.948	1.00	66.03	L N
ATOM	4663	CA	GLU	L	154	9.595	51.209	58.275	1.00	66.03	L C
ATOM	4664	CB	GLU	L	154	10.621	52.259	58.699	1.00	105.84	L C
ATOM	4665	CG	GLU	L	154	11.012	52.175	60.146	1.00	105.84	L C
ATOM	4666	CD	GLU	L	154	11.768	50.906	60.438	1.00	105.84	L C
ATOM	4667	OE1	GLU	L	154	12.910	50.772	59.953	1.00	105.84	L O
ATOM	4668	OE2	GLU	L	154	11.215	50.038	61.141	1.00	105.84	L O
ATOM	4669	C	GLU	L	154	8.202	51.829	58.333	1.00	66.03	L C
ATOM	4670	O	GLU	L	154	7.591	51.906	59.399	1.00	66.03	L O
ATOM	4671	N	THR	L	155	7.704	52.268	57.182	1.00	45.66	L N
ATOM	4672	CA	THR	L	155	6.405	52.922	57.108	1.00	45.66	L C
ATOM	4673	CB	THR	L	155	6.532	54.252	56.375	1.00	42.85	L C
ATOM	4674	OG1	THR	L	155	7.475	55.075	57.068	1.00	42.85	L O
ATOM	4675	CG2	THR	L	155	5.179	54.957	56.280	1.00	42.85	L C
ATOM	4676	C	THR	L	155	5.329	52.123	56.401	1.00	45.66	L C
ATOM	4677	O	THR	L	155	5.601	51.410	55.445	1.00	45.66	L O
ATOM	4678	N	PRO	L	156	4.079	52.239	56.867	1.00	49.78	L N
ATOM	4679	CD	PRO	L	156	3.598	52.968	58.051	1.00	51.19	L C
ATOM	4680	CA	PRO	L	156	2.984	51.508	56.231	1.00	49.78	L C
ATOM	4681	CB	PRO	L	156	1.843	51.686	57.224	1.00	51.19	L C
ATOM	4682	CG	PRO	L	156	2.119	53.046	57.784	1.00	51.19	L C
ATOM	4683	C	PRO	L	156	2.668	52.116	54.862	1.00	49.78	L C

Figure 8-72

ATOM	4684	O	PRO	L	156	2.897	53.302	54.628	1.00	49.78	L O
ATOM	4685	N	THR	L	157	2.143	51.296	53.964	1.00	44.38	L N
ATOM	4686	CA	THR	L	157	1.810	51.763	52.631	1.00	44.38	L C
ATOM	4687	CB	THR	L	157	1.284	50.625	51.767	1.00	32.48	L C
ATOM	4688	OG1	THR	L	157	-0.001	50.214	52.247	1.00	32.48	L O
ATOM	4689	CG2	THR	L	157	2.249	49.448	51.826	1.00	32.48	L C
ATOM	4690	C	THR	L	157	0.749	52.837	52.724	1.00	44.38	L C
ATOM	4691	O	THR	L	157	-0.102	52.790	53.600	1.00	44.38	L O
ATOM	4692	N	ILE	L	158	0.805	53.796	51.806	1.00	60.45	L N
ATOM	4693	CA	ILE	L	158	-0.134	54.907	51.778	1.00	60.45	L C
ATOM	4694	CB	ILE	L	158	0.521	56.135	51.154	1.00	46.47	L C
ATOM	4695	CG2	ILE	L	158	-0.421	57.316	51.229	1.00	46.47	L C
ATOM	4696	CG1	ILE	L	158	1.832	56.440	51.874	1.00	46.47	L C
ATOM	4697	CD1	ILE	L	158	2.603	57.581	51.258	1.00	46.47	L C
ATOM	4698	C	ILE	L	158	-1.398	54.604	50.989	1.00	60.45	L C
ATOM	4699	O	ILE	L	158	-1.328	54.150	49.851	1.00	60.45	L O
ATOM	4700	N	GLN	L	159	-2.551	54.866	51.596	1.00	65.33	L N
ATOM	4701	CA	GLN	L	159	-3.837	54.646	50.940	1.00	65.33	L C
ATOM	4702	CB	GLN	L	159	-4.798	53.964	51.898	1.00	63.36	L C
ATOM	4703	CG	GLN	L	159	-4.294	52.622	52.332	1.00	63.36	L C
ATOM	4704	CD	GLN	L	159	-4.065	51.705	51.156	1.00	63.36	L C
ATOM	4705	OE1	GLN	L	159	-3.203	50.833	51.205	1.00	63.36	L O
ATOM	4706	NE2	GLN	L	159	-4.843	51.889	50.092	1.00	63.36	L N
ATOM	4707	C	GLN	L	159	-4.399	55.990	50.510	1.00	65.33	L C
ATOM	4708	O	GLN	L	159	-4.434	56.929	51.299	1.00	65.33	L O
ATOM	4709	N	LYS	L	160	-4.845	56.089	49.264	1.00	84.51	L N
ATOM	4710	CA	LYS	L	160	-5.359	57.359	48.782	1.00	84.51	L C
ATOM	4711	CB	LYS	L	160	-4.195	58.348	48.655	1.00	95.98	L C
ATOM	4712	CG	LYS	L	160	-4.578	59.757	48.262	1.00	69.36	L C
ATOM	4713	CD	LYS	L	160	-3.354	60.664	48.300	1.00	69.36	L C
ATOM	4714	CE	LYS	L	160	-3.722	62.121	48.037	1.00	69.36	L C
ATOM	4715	NZ	LYS	L	160	-2.539	63.027	48.142	1.00	69.36	L N
ATOM	4716	C	LYS	L	160	-6.062	57.208	47.446	1.00	84.51	L C
ATOM	4717	O	LYS	L	160	-5.456	56.794	46.463	1.00	84.51	L O
ATOM	4718	N	GLY	L	161	-7.347	57.541	47.418	1.00	102.52	L N
ATOM	4719	CA	GLY	L	161	-8.109	57.451	46.187	1.00	102.52	L C
ATOM	4720	C	GLY	L	161	-8.205	56.057	45.600	1.00	102.52	L C
ATOM	4721	O	GLY	L	161	-8.060	55.879	44.389	1.00	102.52	L O
ATOM	4722	N	SER	L	162	-8.449	55.070	46.455	1.00	51.52	L N
ATOM	4723	CA	SER	L	162	-8.575	53.681	46.014	1.00	51.52	L C
ATOM	4724	CB	SER	L	162	-9.651	53.569	44.928	1.00	126.13	L C
ATOM	4725	OG	SER	L	162	-9.863	52.218	44.556	1.00	126.13	L O
ATOM	4726	C	SER	L	162	-7.253	53.097	45.497	1.00	51.52	L C
ATOM	4727	O	SER	L	162	-7.176	51.919	45.148	1.00	51.52	L O
ATOM	4728	N	TYR	L	163	-6.221	53.932	45.429	1.00	45.85	L N
ATOM	4729	CA	TYR	L	163	-4.907	53.486	44.993	1.00	45.85	L C
ATOM	4730	CB	TYR	L	163	-4.192	54.557	44.164	1.00	71.99	L C
ATOM	4731	CG	TYR	L	163	-4.598	54.678	42.716	1.00	71.99	L C
ATOM	4732	CD1	TYR	L	163	-5.331	53.681	42.081	1.00	71.99	L C
ATOM	4733	CE1	TYR	L	163	-5.663	53.784	40.730	1.00	71.99	L C
ATOM	4734	CD2	TYR	L	163	-4.204	55.786	41.965	1.00	71.99	L C
ATOM	4735	CE2	TYR	L	163	-4.526	55.901	40.616	1.00	71.99	L C
ATOM	4736	CZ	TYR	L	163	-5.257	54.896	40.003	1.00	71.99	L C
ATOM	4737	OH	TYR	L	163	-5.580	55.010	38.666	1.00	71.99	L O
ATOM	4738	C	TYR	L	163	-4.081	53.253	46.250	1.00	45.85	L C
ATOM	4739	O	TYR	L	163	-4.516	53.561	47.359	1.00	45.85	L O
ATOM	4740	N	THR	L	164	-2.882	52.717	46.062	1.00	29.42	L N
ATOM	4741	CA	THR	L	164	-1.963	52.476	47.160	1.00	29.42	L C
ATOM	4742	CB	THR	L	164	-2.020	51.013	47.622	1.00	56.26	L C
ATOM	4743	OG1	THR	L	164	-0.935	50.751	48.521	1.00	56.26	L O
ATOM	4744	CG2	THR	L	164	-1.949	50.092	46.440	1.00	56.26	L C
ATOM	4745	C	THR	L	164	-0.555	52.841	46.694	1.00	29.42	L C
ATOM	4746	O	THR	L	164	-0.088	52.384	45.647	1.00	29.42	L O
ATOM	4747	N	PHE	L	165	0.105	53.690	47.473	1.00	48.05	L N
ATOM	4748	CA	PHE	L	165	1.442	54.159	47.150	1.00	48.05	L C
ATOM	4749	CB	PHE	L	165	1.460	55.683	47.140	1.00	43.44	L C

Figure 8-73

ATOM	4750	CG	PHE	L	165	0.422	56.282	46.253	1.00	43.44	L	C
ATOM	4751	CD1	PHE	L	165	-0.906	56.334	46.657	1.00	43.44	L	C
ATOM	4752	CD2	PHE	L	165	0.760	56.749	44.989	1.00	43.44	L	C
ATOM	4753	CE1	PHE	L	165	-1.881	56.838	45.815	1.00	43.44	L	C
ATOM	4754	CE2	PHE	L	165	-0.205	57.256	44.134	1.00	43.44	L	C
ATOM	4755	CZ	PHE	L	165	-1.529	57.301	44.544	1.00	43.44	L	C
ATOM	4756	C	PHE	L	165	2.462	53.647	48.141	1.00	48.05	L	C
ATOM	4757	O	PHE	L	165	2.180	53.534	49.326	1.00	48.05	L	O
ATOM	4758	N	VAL	L	166	3.656	53.337	47.659	1.00	42.66	L	N
ATOM	4759	CA	VAL	L	166	4.683	52.841	48.551	1.00	42.66	L	C
ATOM	4760	CB	VAL	L	166	5.683	51.870	47.831	1.00	21.07	L	C
ATOM	4761	CG1	VAL	L	166	5.218	51.578	46.425	1.00	21.07	L	C
ATOM	4762	CG2	VAL	L	166	7.094	52.438	47.843	1.00	21.07	L	C
ATOM	4763	C	VAL	L	166	5.444	54.008	49.142	1.00	42.66	L	C
ATOM	4764	O	VAL	L	166	5.666	55.022	48.477	1.00	42.66	L	O
ATOM	4765	N	PRO	L	167	5.835	53.882	50.417	1.00	33.70	L	N
ATOM	4766	CD	PRO	L	167	5.451	52.782	51.313	1.00	30.48	L	C
ATOM	4767	CA	PRO	L	167	6.585	54.903	51.150	1.00	33.70	L	C
ATOM	4768	CB	PRO	L	167	6.545	54.396	52.590	1.00	30.48	L	C
ATOM	4769	CG	PRO	L	167	5.358	53.488	52.627	1.00	30.48	L	C
ATOM	4770	C	PRO	L	167	8.003	54.893	50.606	1.00	33.70	L	C
ATOM	4771	O	PRO	L	167	8.681	53.876	50.699	1.00	33.70	L	O
ATOM	4772	N	TRP	L	168	8.454	56.005	50.040	1.00	34.51	L	N
ATOM	4773	CA	TRP	L	168	9.800	56.046	49.493	1.00	35.74	L	C
ATOM	4774	CB	TRP	L	168	9.837	56.843	48.186	1.00	30.73	L	C
ATOM	4775	CG	TRP	L	168	9.022	56.243	47.112	1.00	24.99	L	C
ATOM	4776	CD2	TRP	L	168	9.171	54.935	46.547	1.00	25.56	L	C
ATOM	4777	CE2	TRP	L	168	8.146	54.778	45.588	1.00	24.95	L	C
ATOM	4778	CE3	TRP	L	168	10.067	53.877	46.758	1.00	26.69	L	C
ATOM	4779	CD1	TRP	L	168	7.958	56.810	46.495	1.00	27.84	L	C
ATOM	4780	NE1	TRP	L	168	7.422	55.940	45.581	1.00	30.82	L	N
ATOM	4781	CZ2	TRP	L	168	7.988	53.600	44.832	1.00	24.71	L	C
ATOM	4782	CZ3	TRP	L	168	9.913	52.700	46.006	1.00	30.45	L	C
ATOM	4783	CH2	TRP	L	168	8.878	52.577	45.057	1.00	28.66	L	C
ATOM	4784	C	TRP	L	168	10.818	56.628	50.448	1.00	36.05	L	C
ATOM	4785	O	TRP	L	168	10.517	57.492	51.264	1.00	37.71	L	O
ATOM	4786	N	LEU	L	169	12.036	56.130	50.319	1.00	53.15	L	N
ATOM	4787	CA	LEU	L	169	13.161	56.577	51.112	1.00	53.62	L	C
ATOM	4788	CB	LEU	L	169	13.631	55.433	51.993	1.00	42.48	L	C
ATOM	4789	CG	LEU	L	169	13.867	55.781	53.454	1.00	42.48	L	C
ATOM	4790	CD1	LEU	L	169	13.857	54.510	54.265	1.00	42.48	L	C
ATOM	4791	CD2	LEU	L	169	15.187	56.523	53.599	1.00	42.48	L	C
ATOM	4792	C	LEU	L	169	14.199	56.911	50.047	1.00	54.25	L	C
ATOM	4793	O	LEU	L	169	14.396	56.134	49.108	1.00	52.60	L	O
ATOM	4794	N	LEU	L	170	14.850	58.061	50.164	1.00	38.94	L	N
ATOM	4795	CA	LEU	L	170	15.824	58.444	49.149	1.00	38.94	L	C
ATOM	4796	CB	LEU	L	170	16.272	59.894	49.333	1.00	24.69	L	C
ATOM	4797	CG	LEU	L	170	17.375	60.291	48.344	1.00	24.69	L	C
ATOM	4798	CD1	LEU	L	170	16.785	60.364	46.934	1.00	24.69	L	C
ATOM	4799	CD2	LEU	L	170	17.974	61.614	48.728	1.00	24.69	L	C
ATOM	4800	C	LEU	L	170	17.063	57.570	49.114	1.00	38.94	L	C
ATOM	4801	O	LEU	L	170	17.880	57.608	50.030	1.00	39.69	L	O
ATOM	4802	N	SER	L	171	17.205	56.792	48.046	1.00	35.53	L	N
ATOM	4803	CA	SER	L	171	18.377	55.936	47.888	1.00	35.54	L	C
ATOM	4804	CB	SER	L	171	18.207	55.010	46.681	1.00	44.88	L	C
ATOM	4805	OG	SER	L	171	19.440	54.420	46.315	1.00	44.88	L	O
ATOM	4806	C	SER	L	171	19.562	56.863	47.666	1.00	33.93	L	C
ATOM	4807	O	SER	L	171	20.556	56.792	48.371	1.00	33.63	L	O
ATOM	4808	N	PHE	L	172	19.447	57.736	46.677	1.00	35.12	L	N
ATOM	4809	CA	PHE	L	172	20.502	58.687	46.388	1.00	31.64	L	C
ATOM	4810	CB	PHE	L	172	21.740	57.967	45.856	1.00	53.75	L	C
ATOM	4811	CG	PHE	L	172	21.658	57.617	44.409	1.00	32.41	L	C
ATOM	4812	CD1	PHE	L	172	21.876	58.592	43.436	1.00	32.41	L	C
ATOM	4813	CD2	PHE	L	172	21.311	56.333	44.010	1.00	32.41	L	C
ATOM	4814	CE1	PHE	L	172	21.742	58.293	42.077	1.00	32.41	L	C
ATOM	4815	CE2	PHE	L	172	21.175	56.020	42.662	1.00	32.41	L	C

Figure 8-74

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ATOM 4816  CZ  PHE L 172      21.388  57.001  41.688  1.00 32.41      L    C
ATOM 4817  C   PHE L 172      19.987  59.690  45.363  1.00 33.18      L    C
ATOM 4818  O   PHE L 172      19.082  59.388  44.570  1.00 33.97      L    O
ATOM 4819  N   LYS L 173      20.559  60.887  45.397  1.00 32.68      L    N
ATOM 4820  CA  LYS L 173      20.184  61.953  44.484  1.00 31.72      L    C
ATOM 4821  CB  LYS L 173      19.494  63.087  45.251  1.00 37.32      L    C
ATOM 4822  CG  LYS L 173      19.307  64.378  44.476  1.00 56.32      L    C
ATOM 4823  CD  LYS L 173      18.757  65.471  45.385  1.00 56.32      L    C
ATOM 4824  CE  LYS L 173      18.520  66.768  44.633  1.00 56.32      L    C
ATOM 4825  NZ  LYS L 173      19.775  67.282  44.033  1.00 56.32      L    N
ATOM 4826  C   LYS L 173      21.499  62.420  43.910  1.00 33.50      L    C
ATOM 4827  O   LYS L 173      22.460  62.619  44.641  1.00 34.99      L    O
ATOM 4828  N   ARG L 174      21.557  62.569  42.600  1.00 38.61      L    N
ATOM 4829  CA  ARG L 174      22.786  63.006  41.968  1.00 38.61      L    C
ATOM 4830  CB  ARG L 174      23.478  61.823  41.300  1.00 27.67      L    C
ATOM 4831  CG  ARG L 174      24.809  62.171  40.672  1.00 27.67      L    C
ATOM 4832  CD  ARG L 174      25.233  61.113  39.680  1.00 27.67      L    C
ATOM 4833  NE  ARG L 174      26.551  61.388  39.125  1.00 27.67      L    N
ATOM 4834  CZ  ARG L 174      26.921  61.045  37.898  1.00 27.67      L    C
ATOM 4835  NH1 ARG L 174      26.073  60.421  37.098  1.00 27.67      L    N
ATOM 4836  NH2 ARG L 174      28.140  61.316  37.469  1.00 27.67      L    N
ATOM 4837  C   ARG L 174      22.473  64.065  40.930  1.00 38.61      L    C
ATOM 4838  O   ARG L 174      21.838  63.780  39.910  1.00 38.61      L    O
ATOM 4839  N   GLY L 175      22.898  65.294  41.196  1.00 40.88      L    N
ATOM 4840  CA  GLY L 175      22.645  66.360  40.250  1.00 40.88      L    C
ATOM 4841  C   GLY L 175      21.535  67.325  40.622  1.00 40.88      L    C
ATOM 4842  O   GLY L 175      20.871  67.177  41.649  1.00 40.88      L    O
ATOM 4843  N   SER L 176      21.331  68.312  39.751  1.00 41.52      L    N
ATOM 4844  CA  SER L 176      20.338  69.361  39.936  1.00 41.52      L    C
ATOM 4845  CB  SER L 176      20.760  70.601  39.153  1.00 79.93      L    C
ATOM 4846  OG  SER L 176      21.171  70.250  37.843  1.00 79.93      L    O
ATOM 4847  C   SER L 176      18.933  68.956  39.541  1.00 41.52      L    C
ATOM 4848  O   SER L 176      18.017  69.082  40.338  1.00 41.52      L    O
ATOM 4849  N   ALA L 177      18.755  68.486  38.311  1.00 54.02      L    N
ATOM 4850  CA  ALA L 177      17.435  68.061  37.856  1.00 54.02      L    C
ATOM 4851  CB  ALA L 177      17.495  67.622  36.421  1.00 21.74      L    C
ATOM 4852  C   ALA L 177      17.029  66.894  38.718  1.00 54.02      L    C
ATOM 4853  O   ALA L 177      17.888  66.181  39.237  1.00 54.02      L    O
ATOM 4854  N   LEU L 178      15.731  66.683  38.885  1.00 29.32      L    N
ATOM 4855  CA  LEU L 178      15.293  65.558  39.703  1.00 29.32      L    C
ATOM 4856  CB  LEU L 178      15.894  64.261  39.160  1.00 46.71      L    C
ATOM 4857  CG  LEU L 178      15.134  63.406  38.148  1.00 27.78      L    C
ATOM 4858  CD1 LEU L 178      14.276  64.258  37.238  1.00 27.78      L    C
ATOM 4859  CD2 LEU L 178      16.148  62.592  37.365  1.00 27.78      L    C
ATOM 4860  C   LEU L 178      15.650  65.659  41.186  1.00 29.32      L    C
ATOM 4861  O   LEU L 178      16.819  65.678  41.550  1.00 29.32      L    O
ATOM 4862  N   GLU L 179      14.629  65.729  42.030  1.00 32.03      L    N
ATOM 4863  CA  GLU L 179      14.799  65.757  43.472  1.00 32.03      L    C
ATOM 4864  CB  GLU L 179      15.095  67.169  43.987  1.00113.04      L    C
ATOM 4865  CG  GLU L 179      14.104  68.237  43.606  1.00 62.24      L    C
ATOM 4866  CD  GLU L 179      14.582  69.633  44.008  1.00 62.24      L    C
ATOM 4867  OE1 GLU L 179      15.648  70.069  43.511  1.00 62.24      L    O
ATOM 4868  OE2 GLU L 179      13.897  70.295  44.820  1.00 62.24      L    O
ATOM 4869  C   GLU L 179      13.493  65.203  44.014  1.00 32.03      L    C
ATOM 4870  O   GLU L 179      12.490  65.185  43.301  1.00 32.03      L    O
ATOM 4871  N   GLU L 180      13.500  64.704  45.246  1.00 48.70      L    N
ATOM 4872  CA  GLU L 180      12.290  64.121  45.819  1.00 48.70      L    C
ATOM 4873  CB  GLU L 180      12.666  63.093  46.889  1.00 48.83      L    C
ATOM 4874  CG  GLU L 180      11.501  62.570  47.704  1.00 48.83      L    C
ATOM 4875  CD  GLU L 180      11.932  61.519  48.706  1.00 48.83      L    C
ATOM 4876  OE1 GLU L 180      13.035  61.668  49.278  1.00 58.62      L    O
ATOM 4877  OE2 GLU L 180      11.171  60.550  48.933  1.00 58.62      L    O
ATOM 4878  C   GLU L 180      11.359  65.177  46.397  1.00 48.70      L    C
ATOM 4879  O   GLU L 180      11.751  65.951  47.264  1.00 48.70      L    O
ATOM 4880  N   LYS L 181      10.123  65.201  45.908  1.00 70.70      L    N
ATOM 4881  CA  LYS L 181       9.131  66.164  46.370  1.00 70.70      L    C
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Figure 8-75

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ATOM 4882  CB  LYS L 181       8.185  66.534  45.230  1.00 83.32       L    C
ATOM 4883  CG  LYS L 181       7.147  67.589  45.576  1.00 83.32       L    C
ATOM 4884  CD  LYS L 181       7.778  68.952  45.738  1.00 83.32       L    C
ATOM 4885  CE  LYS L 181       6.710  70.025  45.829  1.00 83.32       L    C
ATOM 4886  NZ  LYS L 181       7.294  71.394  45.747  1.00 83.32       L    N
ATOM 4887  C   LYS L 181       8.329  65.594  47.529  1.00 70.70       L    C
ATOM 4888  O   LYS L 181       8.831  65.463  48.644  1.00 70.70       L    O
ATOM 4889  N   GLU L 182       7.078  65.247  47.267  1.00 44.20       L    N
ATOM 4890  CA  GLU L 182       6.236  64.712  48.318  1.00 44.20       L    C
ATOM 4891  CB  GLU L 182       4.915  65.469  48.358  1.00 80.31       L    C
ATOM 4892  CG  GLU L 182       5.101  66.964  48.373  1.00 80.31       L    C
ATOM 4893  CD  GLU L 182       3.793  67.704  48.412  1.00 80.31       L    C
ATOM 4894  OE1 GLU L 182       3.150  67.702  49.482  1.00 80.31       L    O
ATOM 4895  OE2 GLU L 182       3.408  68.277  47.372  1.00 80.31       L    O
ATOM 4896  C   GLU L 182       6.003  63.242  48.045  1.00 44.20       L    C
ATOM 4897  O   GLU L 182       4.908  62.829  47.673  1.00 44.20       L    O
ATOM 4898  N   ASN L 183       7.054  62.459  48.240  1.00 47.47       L    N
ATOM 4899  CA  ASN L 183       7.011  61.029  48.008  1.00 47.47       L    C
ATOM 4900  CB  ASN L 183       5.841  60.386  48.740  1.00 49.25       L    C
ATOM 4901  CG  ASN L 183       5.985  58.885  48.831  1.00 49.25       L    C
ATOM 4902  OD1 ASN L 183       6.939  58.379  49.436  1.00 49.25       L    O
ATOM 4903  ND2 ASN L 183       5.049  58.160  48.222  1.00 49.25       L    N
ATOM 4904  C   ASN L 183       6.903  60.745  46.518  1.00 47.47       L    C
ATOM 4905  O   ASN L 183       6.459  59.670  46.100  1.00 47.47       L    O
ATOM 4906  N   LYS L 184       7.303  61.727  45.718  1.00 20.98       L    N
ATOM 4907  CA  LYS L 184       7.287  61.575  44.277  1.00 20.98       L    C
ATOM 4908  CB  LYS L 184       6.007  62.167  43.673  1.00 55.41       L    C
ATOM 4909  CG  LYS L 184       5.276  63.164  44.542  1.00 55.41       L    C
ATOM 4910  CD  LYS L 184       3.897  63.445  43.963  1.00 55.41       L    C
ATOM 4911  CE  LYS L 184       3.137  64.469  44.791  1.00 55.41       L    C
ATOM 4912  NZ  LYS L 184       1.828  64.813  44.167  1.00 55.41       L    N
ATOM 4913  C   LYS L 184       8.521  62.238  43.713  1.00 20.98       L    C
ATOM 4914  O   LYS L 184       9.164  63.022  44.398  1.00 20.98       L    O
ATOM 4915  N   ILE L 185       8.875  61.902  42.480  1.00 19.00       L    N
ATOM 4916  CA  ILE L 185      10.054  62.483  41.857  1.00 17.49       L    C
ATOM 4917  CB  ILE L 185      10.659  61.531  40.821  1.00 18.67       L    C
ATOM 4918  CG2 ILE L 185      11.827  62.215  40.126  1.00 18.67       L    C
ATOM 4919  CG1 ILE L 185      11.102  60.232  41.507  1.00 18.67       L    C
ATOM 4920  CD1 ILE L 185      11.548  59.141  40.555  1.00 18.67       L    C
ATOM 4921  C   ILE L 185       9.665  63.766  41.164  1.00 17.95       L    C
ATOM 4922  O   ILE L 185       8.758  63.776  40.325  1.00 21.14       L    O
ATOM 4923  N   LEU L 186      10.348  64.849  41.523  1.00 17.93       L    N
ATOM 4924  CA  LEU L 186      10.082  66.164  40.928  1.00 17.13       L    C
ATOM 4925  CB  LEU L 186      10.056  67.238  42.019  1.00 30.97       L    C
ATOM 4926  CG  LEU L 186       9.990  68.679  41.502  1.00 30.97       L    C
ATOM 4927  CD1 LEU L 186       8.779  68.853  40.578  1.00 30.97       L    C
ATOM 4928  CD2 LEU L 186       9.920  69.627  42.676  1.00 30.97       L    C
ATOM 4929  C   LEU L 186      11.108  66.560  39.859  1.00 14.27       L    C
ATOM 4930  O   LEU L 186      12.306  66.629  40.138  1.00 21.20       L    O
ATOM 4931  N   VAL L 187      10.632  66.830  38.645  1.00 26.37       L    N
ATOM 4932  CA  VAL L 187      11.519  67.225  37.550  1.00 27.87       L    C
ATOM 4933  CB  VAL L 187      10.852  67.042  36.181  1.00 35.10       L    C
ATOM 4934  CG1 VAL L 187      11.783  67.551  35.092  1.00 33.15       L    C
ATOM 4935  CG2 VAL L 187      10.521  65.580  35.955  1.00 42.16       L    C
ATOM 4936  C   VAL L 187      11.898  68.687  37.683  1.00 30.08       L    C
ATOM 4937  O   VAL L 187      11.024  69.547  37.730  1.00 32.40       L    O
ATOM 4938  N   LYS L 188      13.196  68.969  37.736  1.00 31.48       L    N
ATOM 4939  CA  LYS L 188      13.644  70.347  37.878  1.00 33.37       L    C
ATOM 4940  CB  LYS L 188      14.704  70.445  38.982  1.00 53.94       L    C
ATOM 4941  CG  LYS L 188      14.128  70.625  40.377  1.00 57.92       L    C
ATOM 4942  CD  LYS L 188      13.404  71.954  40.473  1.00 63.21       L    C
ATOM 4943  CE  LYS L 188      12.616  72.092  41.766  1.00 68.17       L    C
ATOM 4944  NZ  LYS L 188      13.478  72.164  42.975  1.00 53.34       L    N
ATOM 4945  C   LYS L 188      14.170  70.962  36.581  1.00 31.18       L    C
ATOM 4946  O   LYS L 188      14.248  72.181  36.459  1.00 33.76       L    O
ATOM 4947  N   GLU L 189      14.537  70.119  35.621  1.00 53.76       L    N
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Figure 8-76

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ATOM 4948  CA  GLU L 189      15.049  70.593  34.339  1.00 56.45      L    C
ATOM 4949  CB  GLU L 189      16.556  70.399  34.241  1.00 66.74      L    C
ATOM 4950  CG  GLU L 189      17.334  71.008  35.368  1.00 66.74      L    C
ATOM 4951  CD  GLU L 189      18.813  70.746  35.233  1.00 66.74      L    C
ATOM 4952  OE1 GLU L 189      19.570  71.140  36.143  1.00 66.74      L    O
ATOM 4953  OE2 GLU L 189      19.217  70.146  34.213  1.00 66.74      L    O
ATOM 4954  C   GLU L 189      14.390  69.785  33.245  1.00 53.97      L    C
ATOM 4955  O   GLU L 189      14.577  68.574  33.153  1.00 54.53      L    O
ATOM 4956  N   THR L 190      13.617  70.452  32.406  1.00 36.96      L    N
ATOM 4957  CA  THR L 190      12.937  69.756  31.331  1.00 38.53      L    C
ATOM 4958  CB  THR L 190      12.032  70.722  30.562  1.00 36.74      L    C
ATOM 4959  OG1 THR L 190      12.202  70.511  29.162  1.00 36.74      L    O
ATOM 4960  CG2 THR L 190      12.360  72.159  30.918  1.00 36.74      L    C
ATOM 4961  C   THR L 190      13.947  69.086  30.400  1.00 37.01      L    C
ATOM 4962  O   THR L 190      15.012  69.638  30.129  1.00 37.66      L    O
ATOM 4963  N   GLY L 191      13.608  67.881  29.942  1.00 26.55      L    N
ATOM 4964  CA  GLY L 191      14.486  67.115  29.067  1.00 28.00      L    C
ATOM 4965  C   GLY L 191      14.028  65.668  28.921  1.00 28.20      L    C
ATOM 4966  O   GLY L 191      12.885  65.341  29.240  1.00 30.91      L    O
ATOM 4967  N   TYR L 192      14.905  64.795  28.431  1.00 24.22      L    N
ATOM 4968  CA  TYR L 192      14.548  63.390  28.254  1.00 23.76      L    C
ATOM 4969  CB  TYR L 192      15.156  62.826  26.964  1.00 34.37      L    C
ATOM 4970  CG  TYR L 192      14.491  63.337  25.717  1.00 34.37      L    C
ATOM 4971  CD1 TYR L 192      14.786  64.597  25.224  1.00 34.37      L    C
ATOM 4972  CE1 TYR L 192      14.132  65.104  24.112  1.00 34.37      L    C
ATOM 4973  CD2 TYR L 192      13.520  62.583  25.061  1.00 34.37      L    C
ATOM 4974  CE2 TYR L 192      12.853  63.080  23.946  1.00 34.37      L    C
ATOM 4975  CZ  TYR L 192      13.165  64.345  23.478  1.00 34.37      L    C
ATOM 4976  OH  TYR L 192      12.503  64.875  22.394  1.00 34.37      L    O
ATOM 4977  C   TYR L 192      15.017  62.569  29.441  1.00 22.00      L    C
ATOM 4978  O   TYR L 192      16.141  62.730  29.914  1.00 23.05      L    O
ATOM 4979  N   PHE L 193      14.156  61.681  29.921  1.00 36.86      L    N
ATOM 4980  CA  PHE L 193      14.509  60.857  31.061  1.00 36.86      L    C
ATOM 4981  CB  PHE L 193      13.815  61.361  32.328  1.00 24.51      L    C
ATOM 4982  CG  PHE L 193      14.196  62.763  32.735  1.00 24.51      L    C
ATOM 4983  CD1 PHE L 193      13.703  63.870  32.044  1.00 24.51      L    C
ATOM 4984  CD2 PHE L 193      15.025  62.977  33.840  1.00 24.51      L    C
ATOM 4985  CE1 PHE L 193      14.031  65.170  32.455  1.00 24.51      L    C
ATOM 4986  CE2 PHE L 193      15.355  64.265  34.256  1.00 24.51      L    C
ATOM 4987  CZ  PHE L 193      14.859  65.362  33.565  1.00 24.51      L    C
ATOM 4988  C   PHE L 193      14.175  59.384  30.905  1.00 36.86      L    C
ATOM 4989  O   PHE L 193      13.150  59.001  30.319  1.00 36.86      L    O
ATOM 4990  N   PHE L 194      15.066  58.563  31.447  1.00 12.19      L    N
ATOM 4991  CA  PHE L 194      14.894  57.120  31.458  1.00 12.67      L    C
ATOM 4992  CB  PHE L 194      16.249  56.411  31.400  1.00 12.86      L    C
ATOM 4993  CG  PHE L 194      16.157  54.932  31.573  1.00 12.86      L    C
ATOM 4994  CD1 PHE L 194      15.555  54.137  30.604  1.00 12.86      L    C
ATOM 4995  CD2 PHE L 194      16.641  54.328  32.728  1.00 12.86      L    C
ATOM 4996  CE1 PHE L 194      15.434  52.758  30.788  1.00 12.86      L    C
ATOM 4997  CE2 PHE L 194      16.529  52.952  32.927  1.00 12.86      L    C
ATOM 4998  CZ  PHE L 194      15.924  52.165  31.957  1.00 12.86      L    C
ATOM 4999  C   PHE L 194      14.248  56.914  32.815  1.00 13.06      L    C
ATOM 5000  O   PHE L 194      14.822  57.295  33.833  1.00 15.18      L    O
ATOM 5001  N   ILE L 195      13.048  56.348  32.824  1.00 26.54      L    N
ATOM 5002  CA  ILE L 195      12.319  56.136  34.066  1.00 23.75      L    C
ATOM 5003  CB  ILE L 195      10.966  56.862  34.028  1.00 24.72      L    C
ATOM 5004  CG2 ILE L 195      10.291  56.764  35.376  1.00 24.72      L    C
ATOM 5005  CG1 ILE L 195      11.180  58.325  33.638  1.00 24.72      L    C
ATOM 5006  CD1 ILE L 195       9.903  59.105  33.410  1.00 24.72      L    C
ATOM 5007  C   ILE L 195      12.063  54.659  34.288  1.00 22.72      L    C
ATOM 5008  O   ILE L 195      11.637  53.955  33.376  1.00 21.34      L    O
ATOM 5009  N   TYR L 196      12.312  54.189  35.504  1.00 18.54      L    N
ATOM 5010  CA  TYR L 196      12.103  52.780  35.827  1.00 23.07      L    C
ATOM 5011  CB  TYR L 196      13.428  52.025  35.781  1.00 25.76      L    C
ATOM 5012  CG  TYR L 196      14.474  52.607  36.707  1.00 20.65      L    C
ATOM 5013  CD1 TYR L 196      15.201  53.743  36.346  1.00 23.96      L    C
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Figure 8-77

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ATOM 5014  CE1 TYR L 196      16.149  54.299  37.206  1.00 22.32      L    C
ATOM 5015  CD2 TYR L 196      14.719  52.040  37.956  1.00 24.10      L    C
ATOM 5016  CE2 TYR L 196      15.657  52.590  38.824  1.00 27.27      L    C
ATOM 5017  CZ  TYR L 196      16.370  53.717  38.443  1.00 23.38      L    C
ATOM 5018  OH  TYR L 196      17.306  54.266  39.294  1.00 23.61      L    O
ATOM 5019  C   TYR L 196      11.485  52.598  37.204  1.00 24.32      L    C
ATOM 5020  O   TYR L 196      11.722  53.386  38.120  1.00 21.53      L    O
ATOM 5021  N   GLY L 197      10.703  51.537  37.344  1.00 29.54      L    N
ATOM 5022  CA  GLY L 197      10.058  51.258  38.610  1.00 28.36      L    C
ATOM 5023  C   GLY L 197       9.738  49.785  38.748  1.00 29.11      L    C
ATOM 5024  O   GLY L 197       9.274  49.146  37.801  1.00 27.45      L    O
ATOM 5025  N   GLN L 198      10.003  49.241  39.930  1.00 28.21      L    N
ATOM 5026  CA  GLN L 198       9.734  47.840  40.198  1.00 30.90      L    C
ATOM 5027  CB  GLN L 198      11.019  47.015  40.097  1.00 29.99      L    C
ATOM 5028  CG  GLN L 198      10.873  45.596  40.646  1.00 33.09      L    C
ATOM 5029  CD  GLN L 198      12.157  44.812  40.587  1.00 36.35      L    C
ATOM 5030  OE1 GLN L 198      12.702  44.587  39.509  1.00 35.01      L    O
ATOM 5031  NE2 GLN L 198      12.652  44.389  41.748  1.00 33.60      L    N
ATOM 5032  C   GLN L 198       9.151  47.666  41.583  1.00 30.85      L    C
ATOM 5033  O   GLN L 198       9.549  48.347  42.531  1.00 31.68      L    O
ATOM 5034  N   VAL L 199       8.195  46.756  41.697  1.00 26.42      L    N
ATOM 5035  CA  VAL L 199       7.599  46.462  42.992  1.00 29.57      L    C
ATOM 5036  CB  VAL L 199       6.291  47.300  43.244  1.00 29.94      L    C
ATOM 5037  CG1 VAL L 199       5.756  47.843  41.954  1.00 28.70      L    C
ATOM 5038  CG2 VAL L 199       5.236  46.454  43.939  1.00 31.41      L    C
ATOM 5039  C   VAL L 199       7.323  44.962  43.110  1.00 31.70      L    C
ATOM 5040  O   VAL L 199       6.949  44.306  42.138  1.00 30.42      L    O
ATOM 5041  N   LEU L 200       7.547  44.420  44.301  1.00 37.70      L    N
ATOM 5042  CA  LEU L 200       7.316  43.005  44.545  1.00 36.76      L    C
ATOM 5043  CB  LEU L 200       8.353  42.476  45.538  1.00 18.08      L    C
ATOM 5044  CG  LEU L 200       8.069  41.125  46.193  1.00 18.08      L    C
ATOM 5045  CD1 LEU L 200       7.589  40.104  45.162  1.00 18.08      L    C
ATOM 5046  CD2 LEU L 200       9.338  40.665  46.890  1.00 18.08      L    C
ATOM 5047  C   LEU L 200       5.903  42.773  45.074  1.00 37.74      L    C
ATOM 5048  O   LEU L 200       5.579  43.125  46.207  1.00 39.16      L    O
ATOM 5049  N   TYR L 201       5.062  42.183  44.239  1.00 30.87      L    N
ATOM 5050  CA  TYR L 201       3.686  41.910  44.616  1.00 31.13      L    C
ATOM 5051  CB  TYR L 201       2.815  41.833  43.368  1.00 52.18      L    C
ATOM 5052  CG  TYR L 201       2.760  43.167  42.686  1.00 52.18      L    C
ATOM 5053  CD1 TYR L 201       2.165  44.258  43.318  1.00 52.18      L    C
ATOM 5054  CE1 TYR L 201       2.208  45.524  42.762  1.00 52.18      L    C
ATOM 5055  CD2 TYR L 201       3.395  43.377  41.466  1.00 52.18      L    C
ATOM 5056  CE2 TYR L 201       3.447  44.648  40.896  1.00 52.18      L    C
ATOM 5057  CZ  TYR L 201       2.852  45.715  41.557  1.00 52.18      L    C
ATOM 5058  OH  TYR L 201       2.921  46.984  41.034  1.00 52.18      L    O
ATOM 5059  C   TYR L 201       3.582  40.640  45.424  1.00 30.57      L    C
ATOM 5060  O   TYR L 201       4.029  39.575  45.004  1.00 30.03      L    O
ATOM 5061  N   THR L 202       2.984  40.769  46.599  1.00 34.53      L    N
ATOM 5062  CA  THR L 202       2.824  39.649  47.506  1.00 39.78      L    C
ATOM 5063  CB  THR L 202       3.605  39.937  48.803  1.00 51.09      L    C
ATOM 5064  OG1 THR L 202       3.571  38.793  49.650  1.00 51.09      L    O
ATOM 5065  CG2 THR L 202       3.002  41.109  49.540  1.00 51.09      L    C
ATOM 5066  C   THR L 202       1.332  39.439  47.787  1.00 38.42      L    C
ATOM 5067  O   THR L 202       0.944  38.778  48.741  1.00 37.55      L    O
ATOM 5068  N   ASP L 203       0.506  40.019  46.926  1.00 49.03      L    N
ATOM 5069  CA  ASP L 203      -0.945  39.936  47.027  1.00 49.03      L    C
ATOM 5070  CB  ASP L 203      -1.547  41.259  46.530  1.00 60.53      L    C
ATOM 5071  CG  ASP L 203      -3.063  41.278  46.572  1.00 60.53      L    C
ATOM 5072  OD1 ASP L 203      -3.634  42.388  46.650  1.00 60.53      L    O
ATOM 5073  OD2 ASP L 203      -3.690  40.201  46.512  1.00 60.53      L    O
ATOM 5074  C   ASP L 203      -1.395  38.761  46.164  1.00 49.03      L    C
ATOM 5075  O   ASP L 203      -0.742  38.443  45.175  1.00 49.03      L    O
ATOM 5076  N   LYS L 204      -2.494  38.106  46.527  1.00 45.97      L    N
ATOM 5077  CA  LYS L 204      -2.954  36.972  45.736  1.00 45.97      L    C
ATOM 5078  CB  LYS L 204      -3.236  35.774  46.647  1.00 57.97      L    C
ATOM 5079  CG  LYS L 204      -4.360  35.969  47.637  1.00 57.97      L    C
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Figure 8-78

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ATOM 5080  CD  LYS L 204      -4.526  34.739  48.524  1.00 57.97      L    C
ATOM 5081  CE  LYS L 204      -3.294  34.503  49.398  1.00 57.97      L    C
ATOM 5082  NZ  LYS L 204      -3.438  33.300  50.271  1.00 57.97      L    N
ATOM 5083  C   LYS L 204      -4.156  37.214  44.813  1.00 45.97      L    C
ATOM 5084  O   LYS L 204      -4.820  36.259  44.408  1.00 45.97      L    O
ATOM 5085  N   THR L 205      -4.433  38.474  44.467  1.00 36.45      L    N
ATOM 5086  CA  THR L 205      -5.552  38.785  43.567  1.00 36.45      L    C
ATOM 5087  CB  THR L 205      -5.856  40.289  43.546  1.00 54.00      L    C
ATOM 5088  OG1 THR L 205      -4.802  40.978  42.870  1.00 54.00      L    O
ATOM 5089  CG2 THR L 205      -5.954  40.825  44.954  1.00 54.00      L    C
ATOM 5090  C   THR L 205      -5.142  38.339  42.165  1.00 36.45      L    C
ATOM 5091  O   THR L 205      -3.954  38.325  41.859  1.00 36.45      L    O
ATOM 5092  N   TYR L 206      -6.109  37.994  41.315  1.00 25.81      L    N
ATOM 5093  CA  TYR L 206      -5.798  37.497  39.965  1.00 25.81      L    C
ATOM 5094  CB  TYR L 206      -7.015  37.588  39.033  1.00 82.95      L    C
ATOM 5095  CG  TYR L 206      -7.341  38.979  38.541  1.00 82.95      L    C
ATOM 5096  CD1 TYR L 206      -7.636  39.213  37.197  1.00 82.95      L    C
ATOM 5097  CE1 TYR L 206      -7.957  40.490  36.744  1.00 82.95      L    C
ATOM 5098  CD2 TYR L 206      -7.376  40.058  39.420  1.00 82.95      L    C
ATOM 5099  CE2 TYR L 206      -7.697  41.339  38.980  1.00 82.95      L    C
ATOM 5100  CZ  TYR L 206      -7.986  41.550  37.643  1.00 82.95      L    C
ATOM 5101  OH  TYR L 206      -8.299  42.821  37.214  1.00 82.95      L    O
ATOM 5102  C   TYR L 206      -4.605  38.172  39.290  1.00 25.81      L    C
ATOM 5103  O   TYR L 206      -3.790  37.507  38.641  1.00 25.81      L    O
ATOM 5104  N   ALA L 207      -4.492  39.486  39.447  1.00 34.49      L    N
ATOM 5105  CA  ALA L 207      -3.391  40.208  38.829  1.00 34.49      L    C
ATOM 5106  CB  ALA L 207      -3.727  40.511  37.376  1.00 25.27      L    C
ATOM 5107  C   ALA L 207      -3.051  41.491  39.562  1.00 34.49      L    C
ATOM 5108  O   ALA L 207      -3.933  42.185  40.037  1.00 34.49      L    O
ATOM 5109  N   MET L 208      -1.761  41.792  39.650  1.00 33.14      L    N
ATOM 5110  CA  MET L 208      -1.280  43.002  40.308  1.00 33.14      L    C
ATOM 5111  CB  MET L 208      -0.498  42.648  41.570  1.00 35.97      L    C
ATOM 5112  CG  MET L 208      -1.353  42.071  42.666  1.00 35.97      L    C
ATOM 5113  SD  MET L 208      -2.564  43.268  43.224  1.00 35.97      L    S
ATOM 5114  CE  MET L 208      -1.572  44.198  44.391  1.00 35.97      L    C
ATOM 5115  C   MET L 208      -0.379  43.784  39.356  1.00 33.14      L    C
ATOM 5116  O   MET L 208       0.021  43.278  38.303  1.00 33.14      L    O
ATOM 5117  N   GLY L 209      -0.058  45.019  39.720  1.00 44.31      L    N
ATOM 5118  CA  GLY L 209       0.799  45.818  38.863  1.00 44.31      L    C
ATOM 5119  C   GLY L 209       0.821  47.268  39.287  1.00 44.31      L    C
ATOM 5120  O   GLY L 209       0.061  47.670  40.165  1.00 44.31      L    O
ATOM 5121  N   HIS L 210       1.701  48.059  38.685  1.00 32.94      L    N
ATOM 5122  CA  HIS L 210       1.774  49.469  39.035  1.00 32.94      L    C
ATOM 5123  CB  HIS L 210       2.976  49.762  39.932  1.00 45.15      L    C
ATOM 5124  CG  HIS L 210       4.279  49.294  39.372  1.00 45.15      L    C
ATOM 5125  CD2 HIS L 210       5.390  49.977  39.007  1.00 45.15      L    C
ATOM 5126  ND1 HIS L 210       4.568  47.961  39.175  1.00 45.15      L    N
ATOM 5127  CE1 HIS L 210       5.802  47.840  38.716  1.00 45.15      L    C
ATOM 5128  NE2 HIS L 210       6.322  49.051  38.606  1.00 45.15      L    N
ATOM 5129  C   HIS L 210       1.831  50.370  37.828  1.00 32.94      L    C
ATOM 5130  O   HIS L 210       2.069  49.928  36.698  1.00 32.94      L    O
ATOM 5131  N   LEU L 211       1.604  51.649  38.089  1.00 24.83      L    N
ATOM 5132  CA  LEU L 211       1.612  52.652  37.048  1.00 26.80      L    C
ATOM 5133  CB  LEU L 211       0.272  53.374  37.010  1.00 11.39      L    C
ATOM 5134  CG  LEU L 211      -0.974  52.514  37.173  1.00 10.65      L    C
ATOM 5135  CD1 LEU L 211      -2.139  53.437  37.448  1.00 10.65      L    C
ATOM 5136  CD2 LEU L 211      -1.209  51.656  35.933  1.00 10.65      L    C
ATOM 5137  C   LEU L 211       2.680  53.671  37.361  1.00 27.88      L    C
ATOM 5138  O   LEU L 211       2.751  54.184  38.475  1.00 30.87      L    O
ATOM 5139  N   ILE L 212       3.537  53.946  36.394  1.00 36.26      L    N
ATOM 5140  CA  ILE L 212       4.530  54.976  36.600  1.00 33.97      L    C
ATOM 5141  CB  ILE L 212       5.869  54.627  35.924  1.00 20.28      L    C
ATOM 5142  CG2 ILE L 212       6.784  55.844  35.908  1.00 27.09      L    C
ATOM 5143  CG1 ILE L 212       6.542  53.492  36.696  1.00 27.09      L    C
ATOM 5144  CD1 ILE L 212       7.823  53.018  36.065  1.00 27.09      L    C
ATOM 5145  C   ILE L 212       3.834  56.135  35.905  1.00 31.92      L    C
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Figure 8-79

ATOM	5146	O	ILE	L	212	3.741	56.178	34.678	1.00	32.92	L O
ATOM	5147	N	GLN	L	213	3.309	57.055	36.704	1.00	36.76	L N
ATOM	5148	CA	GLN	L	213	2.567	58.178	36.167	1.00	37.94	L C
ATOM	5149	CB	GLN	L	213	1.253	58.319	36.925	1.00	29.11	L C
ATOM	5150	CG	GLN	L	213	0.489	57.030	37.064	1.00	35.54	L C
ATOM	5151	CD	GLN	L	213	-0.795	57.214	37.835	1.00	35.54	L C
ATOM	5152	OE1	GLN	L	213	-0.792	57.746	38.946	1.00	35.54	L O
ATOM	5153	NE2	GLN	L	213	-1.909	56.772	37.249	1.00	35.54	L N
ATOM	5154	C	GLN	L	213	3.288	59.514	36.179	1.00	35.91	L C
ATOM	5155	O	GLN	L	213	4.205	59.753	36.976	1.00	34.63	L O
ATOM	5156	N	ARG	L	214	2.837	60.385	35.282	1.00	29.78	L N
ATOM	5157	CA	ARG	L	214	3.374	61.727	35.136	1.00	30.35	L C
ATOM	5158	CB	ARG	L	214	3.783	61.941	33.690	1.00	45.42	L C
ATOM	5159	CG	ARG	L	214	4.208	63.341	33.401	1.00	37.40	L C
ATOM	5160	CD	ARG	L	214	4.315	63.551	31.924	1.00	37.40	L C
ATOM	5161	NE	ARG	L	214	4.863	64.861	31.603	1.00	37.40	L N
ATOM	5162	CZ	ARG	L	214	4.725	65.443	30.420	1.00	37.40	L C
ATOM	5163	NH1	ARG	L	214	4.056	64.825	29.452	1.00	37.40	L N
ATOM	5164	NH2	ARG	L	214	5.243	66.642	30.211	1.00	37.40	L N
ATOM	5165	C	ARG	L	214	2.319	62.767	35.521	1.00	29.00	L C
ATOM	5166	O	ARG	L	214	1.235	62.794	34.943	1.00	30.02	L O
ATOM	5167	N	LYS	L	215	2.631	63.609	36.501	1.00	30.41	L N
ATOM	5168	CA	LYS	L	215	1.717	64.659	36.942	1.00	35.06	L C
ATOM	5169	CB	LYS	L	215	1.835	64.845	38.452	1.00	154.91	L C
ATOM	5170	CG	LYS	L	215	0.622	65.452	39.122	1.00	90.83	L C
ATOM	5171	CD	LYS	L	215	0.914	65.688	40.601	1.00	90.83	L C
ATOM	5172	CE	LYS	L	215	-0.345	65.954	41.415	1.00	90.83	L C
ATOM	5173	NZ	LYS	L	215	-1.180	64.726	41.574	1.00	90.83	L N
ATOM	5174	C	LYS	L	215	2.218	65.906	36.218	1.00	33.30	L C
ATOM	5175	O	LYS	L	215	3.242	66.471	36.601	1.00	32.40	L O
ATOM	5176	N	LYS	L	216	1.514	66.321	35.165	1.00	45.93	L N
ATOM	5177	CA	LYS	L	216	1.899	67.493	34.362	1.00	45.93	L C
ATOM	5178	CB	LYS	L	216	1.210	67.433	33.004	1.00	50.19	L C
ATOM	5179	CG	LYS	L	216	1.580	66.214	32.197	1.00	33.86	L C
ATOM	5180	CD	LYS	L	216	0.956	66.233	30.805	1.00	33.86	L C
ATOM	5181	CE	LYS	L	216	-0.544	66.012	30.847	1.00	33.86	L C
ATOM	5182	NZ	LYS	L	216	-1.130	65.959	29.474	1.00	33.86	L N
ATOM	5183	C	LYS	L	216	1.610	68.858	34.980	1.00	45.93	L C
ATOM	5184	O	LYS	L	216	0.591	69.044	35.638	1.00	45.93	L O
ATOM	5185	N	VAL	L	217	2.507	69.816	34.761	1.00	47.32	L N
ATOM	5186	CA	VAL	L	217	2.307	71.163	35.287	1.00	47.32	L C
ATOM	5187	CB	VAL	L	217	3.629	71.938	35.486	1.00	46.55	L C
ATOM	5188	CG1	VAL	L	217	4.347	71.415	36.693	1.00	46.55	L C
ATOM	5189	CG2	VAL	L	217	4.499	71.827	34.256	1.00	46.55	L C
ATOM	5190	C	VAL	L	217	1.458	71.955	34.313	1.00	47.32	L C
ATOM	5191	O	VAL	L	217	0.753	72.884	34.704	1.00	47.32	L O
ATOM	5192	N	HIS	L	218	1.536	71.582	33.038	1.00	23.37	L N
ATOM	5193	CA	HIS	L	218	0.774	72.241	31.975	1.00	23.37	L C
ATOM	5194	CB	HIS	L	218	1.706	72.685	30.840	1.00	49.10	L C
ATOM	5195	CG	HIS	L	218	2.812	73.593	31.268	1.00	49.10	L C
ATOM	5196	CD2	HIS	L	218	4.048	73.788	30.754	1.00	49.10	L C
ATOM	5197	ND1	HIS	L	218	2.683	74.488	32.310	1.00	49.10	L N
ATOM	5198	CE1	HIS	L	218	3.793	75.195	32.420	1.00	49.10	L C
ATOM	5199	NE2	HIS	L	218	4.637	74.790	31.487	1.00	49.10	L N
ATOM	5200	C	HIS	L	218	-0.257	71.270	31.370	1.00	23.37	L C
ATOM	5201	O	HIS	L	218	0.060	70.132	31.106	1.00	23.37	L O
ATOM	5202	N	VAL	L	219	-1.483	71.685	31.091	1.00	33.51	L N
ATOM	5203	CA	VAL	L	219	-2.435	70.749	30.484	1.00	33.51	L C
ATOM	5204	CB	VAL	L	219	-3.345	70.091	31.529	1.00	20.61	L C
ATOM	5205	CG1	VAL	L	219	-4.296	69.141	30.847	1.00	20.61	L C
ATOM	5206	CG2	VAL	L	219	-2.509	69.328	32.539	1.00	20.61	L C
ATOM	5207	C	VAL	L	219	-3.289	71.479	29.473	1.00	33.51	L C
ATOM	5208	O	VAL	L	219	-3.573	72.651	29.633	1.00	33.51	L O
ATOM	5209	N	PHE	L	220	-3.699	70.795	28.421	1.00	22.10	L N
ATOM	5210	CA	PHE	L	220	-4.497	71.456	27.407	1.00	22.10	L C
ATOM	5211	CB	PHE	L	220	-3.588	71.931	26.267	1.00	21.36	L C

Figure 8-80

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ATOM 5212  CG  PHE L 220      -2.525  72.902  26.708  1.00 21.36      L    C
ATOM 5213  CD1 PHE L 220      -1.282  72.453  27.125  1.00 21.36      L    C
ATOM 5214  CD2 PHE L 220      -2.785  74.269  26.752  1.00 21.36      L    C
ATOM 5215  CE1 PHE L 220      -0.305  73.353  27.587  1.00 21.36      L    C
ATOM 5216  CE2 PHE L 220      -1.817  75.168  27.211  1.00 21.36      L    C
ATOM 5217  CZ  PHE L 220      -0.572  74.704  27.630  1.00 21.36      L    C
ATOM 5218  C   PHE L 220      -5.635  70.625  26.846  1.00 22.10      L    C
ATOM 5219  O   PHE L 220      -5.560  69.399  26.771  1.00 22.10      L    O
ATOM 5220  N   GLY L 221      -6.697  71.315  26.453  1.00 43.43      L    N
ATOM 5221  CA  GLY L 221      -7.843  70.641  25.889  1.00 43.43      L    C
ATOM 5222  C   GLY L 221      -8.331  69.524  26.779  1.00 43.43      L    C
ATOM 5223  O   GLY L 221      -8.316  69.634  28.006  1.00 43.43      L    O
ATOM 5224  N   ASP L 222      -8.735  68.428  26.151  1.00 44.16      L    N
ATOM 5225  CA  ASP L 222      -9.274  67.286  26.865  1.00 44.16      L    C
ATOM 5226  CB  ASP L 222     -10.132  66.473  25.906  1.00 56.84      L    C
ATOM 5227  CG  ASP L 222     -11.333  67.246  25.419  1.00 56.84      L    C
ATOM 5228  OD1 ASP L 222     -11.843  66.920  24.325  1.00 56.84      L    O
ATOM 5229  OD2 ASP L 222     -11.773  68.174  26.134  1.00 56.84      L    O
ATOM 5230  C   ASP L 222      -8.288  66.372  27.581  1.00 44.16      L    C
ATOM 5231  O   ASP L 222      -8.707  65.506  28.348  1.00 44.16      L    O
ATOM 5232  N   GLU L 223      -6.990  66.550  27.357  1.00 37.70      L    N
ATOM 5233  CA  GLU L 223      -6.017  65.686  28.025  1.00 37.70      L    C
ATOM 5234  CB  GLU L 223      -4.629  65.906  27.414  1.00 40.35      L    C
ATOM 5235  CG  GLU L 223      -4.538  65.368  25.979  1.00 40.35      L    C
ATOM 5236  CD  GLU L 223      -3.138  65.441  25.388  1.00 40.35      L    C
ATOM 5237  OE1 GLU L 223      -2.772  64.537  24.600  1.00 40.35      L    O
ATOM 5238  OE2 GLU L 223      -2.411  66.407  25.705  1.00 40.35      L    O
ATOM 5239  C   GLU L 223      -6.002  65.848  29.561  1.00 37.70      L    C
ATOM 5240  O   GLU L 223      -6.405  66.891  30.090  1.00 37.70      L    O
ATOM 5241  N   LEU L 224      -5.553  64.803  30.261  1.00 32.20      L    N
ATOM 5242  CA  LEU L 224      -5.499  64.765  31.735  1.00 32.20      L    C
ATOM 5243  CB  LEU L 224      -5.656  63.322  32.223  1.00 38.90      L    C
ATOM 5244  CG  LEU L 224      -7.019  62.633  32.280  1.00 38.90      L    C
ATOM 5245  CD1 LEU L 224      -7.893  63.052  31.113  1.00 38.90      L    C
ATOM 5246  CD2 LEU L 224      -6.791  61.131  32.299  1.00 38.90      L    C
ATOM 5247  C   LEU L 224      -4.223  65.312  32.358  1.00 32.20      L    C
ATOM 5248  O   LEU L 224      -3.156  65.242  31.749  1.00 32.20      L    O
ATOM 5249  N   SER L 225      -4.322  65.842  33.577  1.00 55.11      L    N
ATOM 5250  CA  SER L 225      -3.125  66.347  34.233  1.00 55.11      L    C
ATOM 5251  CB  SER L 225      -3.478  67.193  35.460  1.00 89.38      L    C
ATOM 5252  OG  SER L 225      -4.286  66.471  36.365  1.00 89.38      L    O
ATOM 5253  C   SER L 225      -2.233  65.170  34.636  1.00 55.11      L    C
ATOM 5254  O   SER L 225      -1.007  65.289  34.649  1.00 55.11      L    O
ATOM 5255  N   LEU L 226      -2.850  64.032  34.949  1.00 38.71      L    N
ATOM 5256  CA  LEU L 226      -2.101  62.837  35.334  1.00 37.48      L    C
ATOM 5257  CB  LEU L 226      -2.639  62.276  36.635  1.00 22.35      L    C
ATOM 5258  CG  LEU L 226      -1.825  61.128  37.234  1.00 22.35      L    C
ATOM 5259  CD1 LEU L 226      -0.512  61.663  37.794  1.00 22.35      L    C
ATOM 5260  CD2 LEU L 226      -2.613  60.464  38.341  1.00 22.35      L    C
ATOM 5261  C   LEU L 226      -2.207  61.757  34.263  1.00 32.95      L    C
ATOM 5262  O   LEU L 226      -3.295  61.271  33.974  1.00 33.72      L    O
ATOM 5263  N   VAL L 227      -1.085  61.384  33.666  1.00 56.73      L    N
ATOM 5264  CA  VAL L 227      -1.110  60.363  32.636  1.00 51.73      L    C
ATOM 5265  CB  VAL L 227      -0.740  60.950  31.265  1.00 36.85      L    C
ATOM 5266  CG1 VAL L 227      -1.726  62.042  30.891  1.00 36.85      L    C
ATOM 5267  CG2 VAL L 227       0.684  61.506  31.304  1.00 36.85      L    C
ATOM 5268  C   VAL L 227      -0.105  59.292  33.012  1.00 47.56      L    C
ATOM 5269  O   VAL L 227       0.942  59.593  33.593  1.00 38.47      L    O
ATOM 5270  N   THR L 228      -0.409  58.037  32.698  1.00 37.14      L    N
ATOM 5271  CA  THR L 228       0.536  56.989  33.042  1.00 38.85      L    C
ATOM 5272  CB  THR L 228      -0.180  55.666  33.468  1.00 58.84      L    C
ATOM 5273  OG1 THR L 228      -0.152  54.733  32.386  1.00 58.84      L    O
ATOM 5274  CG2 THR L 228      -1.632  55.933  33.877  1.00 58.84      L    C
ATOM 5275  C   THR L 228       1.466  56.748  31.858  1.00 37.14      L    C
ATOM 5276  O   THR L 228       1.015  56.555  30.732  1.00 39.16      L    O
ATOM 5277  N   LEU L 229       2.769  56.803  32.125  1.00 29.38      L    N
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Figure 8-81

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ATOM 5278  CA  LEU L 229       3.796  56.598  31.108  1.00 26.07      L    C
ATOM 5279  CB  LEU L 229       5.124  57.190  31.578  1.00 27.53      L    C
ATOM 5280  CG  LEU L 229       5.383  58.689  31.356  1.00 27.53      L    C
ATOM 5281  CD1 LEU L 229       4.099  59.426  31.054  1.00 27.53      L    C
ATOM 5282  CD2 LEU L 229       6.056  59.273  32.590  1.00 27.53      L    C
ATOM 5283  C   LEU L 229       3.976  55.124  30.799  1.00 25.96      L    C
ATOM 5284  O   LEU L 229       3.884  54.714  29.645  1.00 26.31      L    O
ATOM 5285  N   PHE L 230       4.246  54.328  31.828  1.00 33.27      L    N
ATOM 5286  CA  PHE L 230       4.418  52.893  31.644  1.00 33.01      L    C
ATOM 5287  CB  PHE L 230       5.891  52.516  31.657  1.00 35.66      L    C
ATOM 5288  CG  PHE L 230       6.768  53.566  31.092  1.00 35.66      L    C
ATOM 5289  CD1 PHE L 230       7.483  54.404  31.932  1.00 35.66      L    C
ATOM 5290  CD2 PHE L 230       6.827  53.776  29.711  1.00 35.66      L    C
ATOM 5291  CE1 PHE L 230       8.247  55.448  31.412  1.00 35.66      L    C
ATOM 5292  CE2 PHE L 230       7.586  54.816  29.174  1.00 35.66      L    C
ATOM 5293  CZ  PHE L 230       8.298  55.657  30.027  1.00 35.66      L    C
ATOM 5294  C   PHE L 230       3.740  52.174  32.777  1.00 34.90      L    C
ATOM 5295  O   PHE L 230       3.558  52.740  33.861  1.00 33.66      L    O
ATOM 5296  N   ARG L 231       3.361  50.927  32.524  1.00 20.17      L    N
ATOM 5297  CA  ARG L 231       2.740  50.126  33.561  1.00 22.01      L    C
ATOM 5298  CB  ARG L 231       1.201  50.197  33.473  1.00 13.91      L    C
ATOM 5299  CG  ARG L 231       0.567  49.594  32.241  1.00 13.91      L    C
ATOM 5300  CD  ARG L 231      -0.864  50.066  32.150  1.00 17.95      L    C
ATOM 5301  NE  ARG L 231      -1.640  49.343  31.146  1.00 25.29      L    N
ATOM 5302  CZ  ARG L 231      -2.088  48.105  31.310  1.00 35.79      L    C
ATOM 5303  NH1 ARG L 231      -1.834  47.459  32.440  1.00 32.02      L    N
ATOM 5304  NH2 ARG L 231      -2.790  47.518  30.351  1.00 36.56      L    N
ATOM 5305  C   ARG L 231       3.244  48.690  33.511  1.00 24.15      L    C
ATOM 5306  O   ARG L 231       3.730  48.201  32.485  1.00 27.14      L    O
ATOM 5307  N   CYS L 232       3.130  48.036  34.655  1.00 40.76      L    N
ATOM 5308  CA  CYS L 232       3.574  46.674  34.844  1.00 40.70      L    C
ATOM 5309  C   CYS L 232       2.378  45.858  35.320  1.00 44.16      L    C
ATOM 5310  O   CYS L 232       1.575  46.338  36.115  1.00 45.59      L    O
ATOM 5311  CB  CYS L 232       4.649  46.672  35.922  1.00 53.97      L    C
ATOM 5312  SG  CYS L 232       5.978  45.488  35.639  1.00 53.97      L    S
ATOM 5313  N   ILE L 233       2.251  44.632  34.840  1.00  9.67      L    N
ATOM 5314  CA  ILE L 233       1.150  43.787  35.273  1.00 11.37      L    C
ATOM 5315  CB  ILE L 233      -0.038  43.841  34.266  1.00 36.44      L    C
ATOM 5316  CG2 ILE L 233       0.390  43.301  32.911  1.00 36.44      L    C
ATOM 5317  CG1 ILE L 233      -1.207  43.009  34.783  1.00 36.44      L    C
ATOM 5318  CD1 ILE L 233      -1.743  43.492  36.078  1.00 36.44      L    C
ATOM 5319  C   ILE L 233       1.650  42.351  35.407  1.00 15.85      L    C
ATOM 5320  O   ILE L 233       2.382  41.846  34.550  1.00 16.31      L    O
ATOM 5321  N   GLN L 234       1.238  41.689  36.480  1.00 29.90      L    N
ATOM 5322  CA  GLN L 234       1.664  40.327  36.729  1.00 33.79      L    C
ATOM 5323  CB  GLN L 234       2.845  40.366  37.700  1.00 37.73      L    C
ATOM 5324  CG  GLN L 234       3.699  39.120  37.711  1.00 37.73      L    C
ATOM 5325  CD  GLN L 234       4.551  38.969  36.463  1.00 37.73      L    C
ATOM 5326  OE1 GLN L 234       5.041  37.877  36.161  1.00 37.73      L    O
ATOM 5327  NE2 GLN L 234       4.734  40.062  35.735  1.00 37.73      L    N
ATOM 5328  C   GLN L 234       0.518  39.496  37.313  1.00 34.74      L    C
ATOM 5329  O   GLN L 234      -0.168  39.942  38.227  1.00 34.72      L    O
ATOM 5330  N   ASN L 235       0.291  38.301  36.775  1.00 39.57      L    N
ATOM 5331  CA  ASN L 235      -0.757  37.439  37.311  1.00 43.01      L    C
ATOM 5332  CB  ASN L 235      -1.049  36.276  36.367  1.00 36.67      L    C
ATOM 5333  CG  ASN L 235      -1.943  36.662  35.215  1.00 36.67      L    C
ATOM 5334  OD1 ASN L 235      -3.044  37.165  35.411  1.00 36.67      L    O
ATOM 5335  ND2 ASN L 235      -1.479  36.414  34.004  1.00 36.67      L    N
ATOM 5336  C   ASN L 235      -0.234  36.884  38.629  1.00 40.91      L    C
ATOM 5337  O   ASN L 235       0.951  36.567  38.748  1.00 38.22      L    O
ATOM 5338  N   MET L 236      -1.107  36.764  39.619  1.00 31.53      L    N
ATOM 5339  CA  MET L 236      -0.708  36.235  40.923  1.00 31.53      L    C
ATOM 5340  CB  MET L 236      -1.118  37.204  42.026  1.00 43.52      L    C
ATOM 5341  CG  MET L 236      -0.513  38.577  41.894  1.00 43.52      L    C
ATOM 5342  SD  MET L 236       1.262  38.554  42.103  1.00 43.52      L    S
ATOM 5343  CE  MET L 236       1.716  38.702  40.420  1.00 43.52      L    C
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Figure 8-82

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ATOM 5344  C   MET L 236      -1.344  34.868  41.198  1.00 31.53      L    C
ATOM 5345  O   MET L 236      -2.486  34.617  40.811  1.00 31.53      L    O
ATOM 5346  N   PRO L 237      -0.606  33.966  41.866  1.00 36.52      L    N
ATOM 5347  CD  PRO L 237       0.817  34.082  42.241  1.00 27.91      L    C
ATOM 5348  CA  PRO L 237      -1.114  32.630  42.187  1.00 36.52      L    C
ATOM 5349  CB  PRO L 237       0.158  31.838  42.405  1.00 27.91      L    C
ATOM 5350  CG  PRO L 237       1.034  32.844  43.089  1.00 27.91      L    C
ATOM 5351  C   PRO L 237      -1.995  32.649  43.437  1.00 36.52      L    C
ATOM 5352  O   PRO L 237      -2.074  33.665  44.139  1.00 36.52      L    O
ATOM 5353  N   GLU L 238      -2.644  31.519  43.716  1.00 45.81      L    N
ATOM 5354  CA  GLU L 238      -3.522  31.392  44.881  1.00 45.81      L    C
ATOM 5355  CB  GLU L 238      -4.362  30.123  44.763  1.00 97.85      L    C
ATOM 5356  CG  GLU L 238      -5.385  30.177  43.649  1.00 97.85      L    C
ATOM 5357  CD  GLU L 238      -6.485  31.182  43.926  1.00 97.85      L    C
ATOM 5358  OE1 GLU L 238      -6.167  32.355  44.213  1.00 97.85      L    O
ATOM 5359  OE2 GLU L 238      -7.671  30.799  43.853  1.00 97.85      L    O
ATOM 5360  C   GLU L 238      -2.755  31.371  46.197  1.00 45.81      L    C
ATOM 5361  O   GLU L 238      -3.145  32.025  47.165  1.00 45.81      L    O
ATOM 5362  N   THR L 239      -1.657  30.622  46.218  1.00 52.09      L    N
ATOM 5363  CA  THR L 239      -0.836  30.504  47.413  1.00 52.09      L    C
ATOM 5364  CB  THR L 239      -0.738  29.039  47.846  1.00 49.18      L    C
ATOM 5365  OG1 THR L 239      -0.111  28.282  46.809  1.00 49.18      L    O
ATOM 5366  CG2 THR L 239      -2.126  28.466  48.090  1.00 49.18      L    C
ATOM 5367  C   THR L 239       0.578  31.061  47.223  1.00 52.09      L    C
ATOM 5368  O   THR L 239       1.122  31.064  46.111  1.00 52.09      L    O
ATOM 5369  N   LEU L 240       1.165  31.532  48.322  1.00 41.67      L    N
ATOM 5370  CA  LEU L 240       2.509  32.103  48.309  1.00 41.67      L    C
ATOM 5371  CB  LEU L 240       3.564  30.996  48.217  1.00 47.45      L    C
ATOM 5372  CG  LEU L 240       3.727  30.038  49.398  1.00 47.45      L    C
ATOM 5373  CD1 LEU L 240       4.054  30.816  50.654  1.00 47.45      L    C
ATOM 5374  CD2 LEU L 240       2.448  29.249  49.588  1.00 47.45      L    C
ATOM 5375  C   LEU L 240       2.734  33.091  47.171  1.00 41.67      L    C
ATOM 5376  O   LEU L 240       3.740  33.018  46.474  1.00 41.67      L    O
ATOM 5377  N   PRO L 241       1.800  34.029  46.963  1.00 51.08      L    N
ATOM 5378  CD  PRO L 241       0.682  34.463  47.813  1.00 50.67      L    C
ATOM 5379  CA  PRO L 241       2.016  34.982  45.875  1.00 47.07      L    C
ATOM 5380  CB  PRO L 241       0.839  35.938  46.020  1.00 50.67      L    C
ATOM 5381  CG  PRO L 241       0.590  35.930  47.480  1.00 50.67      L    C
ATOM 5382  C   PRO L 241       3.363  35.671  46.074  1.00 44.66      L    C
ATOM 5383  O   PRO L 241       3.643  36.217  47.142  1.00 45.70      L    O
ATOM 5384  N   ASN L 242       4.198  35.646  45.046  1.00 41.66      L    N
ATOM 5385  CA  ASN L 242       5.511  36.248  45.164  1.00 38.43      L    C
ATOM 5386  CB  ASN L 242       6.430  35.254  45.876  1.00 47.24      L    C
ATOM 5387  CG  ASN L 242       7.335  35.919  46.877  1.00 47.24      L    C
ATOM 5388  OD1 ASN L 242       7.972  35.259  47.702  1.00 47.24      L    O
ATOM 5389  ND2 ASN L 242       7.405  37.239  46.810  1.00 47.24      L    N
ATOM 5390  C   ASN L 242       6.082  36.633  43.795  1.00 35.99      L    C
ATOM 5391  O   ASN L 242       6.959  35.950  43.269  1.00 36.12      L    O
ATOM 5392  N   ASN L 243       5.589  37.733  43.226  1.00 36.43      L    N
ATOM 5393  CA  ASN L 243       6.048  38.200  41.916  1.00 33.74      L    C
ATOM 5394  CB  ASN L 243       4.932  38.060  40.887  1.00 35.95      L    C
ATOM 5395  CG  ASN L 243       4.809  36.654  40.323  1.00 35.95      L    C
ATOM 5396  OD1 ASN L 243       3.703  36.179  40.058  1.00 35.95      L    O
ATOM 5397  ND2 ASN L 243       5.937  35.995  40.107  1.00 35.95      L    N
ATOM 5398  C   ASN L 243       6.521  39.647  41.882  1.00 30.87      L    C
ATOM 5399  O   ASN L 243       5.810  40.542  42.316  1.00 30.79      L    O
ATOM 5400  N   SER L 244       7.720  39.876  41.356  1.00 14.90      L    N
ATOM 5401  CA  SER L 244       8.245  41.237  41.230  1.00 14.90      L    C
ATOM 5402  CB  SER L 244       9.760  41.281  41.489  1.00 20.90      L    C
ATOM 5403  OG  SER L 244      10.497  40.573  40.498  1.00 20.90      L    O
ATOM 5404  C   SER L 244       7.942  41.653  39.790  1.00 18.64      L    C
ATOM 5405  O   SER L 244       7.871  40.815  38.899  1.00 23.96      L    O
ATOM 5406  N   CYS L 245       7.752  42.943  39.568  1.00 20.03      L    N
ATOM 5407  CA  CYS L 245       7.444  43.437  38.238  1.00 18.28      L    C
ATOM 5408  C   CYS L 245       8.274  44.685  37.966  1.00 18.84      L    C
ATOM 5409  O   CYS L 245       8.257  45.624  38.771  1.00 16.80      L    O
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Figure 8-83

ATOM	5410	CB	CYS	L	245	5.964	43.789	38.166	1.00	51.76	L C
ATOM	5411	SG	CYS	L	245	5.310	43.758	36.478	1.00	51.76	L S
ATOM	5412	N	TYR	L	246	8.990	44.703	36.842	1.00	17.86	L N
ATOM	5413	CA	TYR	L	246	9.825	45.851	36.481	1.00	14.58	L C
ATOM	5414	CB	TYR	L	246	11.315	45.450	36.495	1.00	20.73	L C
ATOM	5415	CG	TYR	L	246	12.281	46.466	35.885	1.00	20.73	L C
ATOM	5416	CD1	TYR	L	246	13.193	47.167	36.684	1.00	20.73	L C
ATOM	5417	CE1	TYR	L	246	14.103	48.082	36.120	1.00	20.73	L C
ATOM	5418	CD2	TYR	L	246	12.300	46.710	34.505	1.00	20.73	L C
ATOM	5419	CE2	TYR	L	246	13.197	47.620	33.941	1.00	20.73	L C
ATOM	5420	CZ	TYR	L	246	14.095	48.294	34.749	1.00	20.73	L C
ATOM	5421	OH	TYR	L	246	15.012	49.136	34.168	1.00	20.73	L O
ATOM	5422	C	TYR	L	246	9.453	46.388	35.100	1.00	13.31	L C
ATOM	5423	O	TYR	L	246	9.170	45.626	34.180	1.00	12.49	L O
ATOM	5424	N	SER	L	247	9.446	47.706	34.956	1.00	44.19	L N
ATOM	5425	CA	SER	L	247	9.154	48.306	33.666	1.00	42.89	L C
ATOM	5426	CB	SER	L	247	7.656	48.509	33.469	1.00	27.23	L C
ATOM	5427	OG	SER	L	247	7.387	48.914	32.136	1.00	27.23	L O
ATOM	5428	C	SER	L	247	9.868	49.635	33.602	1.00	42.11	L C
ATOM	5429	O	SER	L	247	10.036	50.305	34.625	1.00	39.54	L O
ATOM	5430	N	ALA	L	248	10.306	50.007	32.404	1.00	35.19	L N
ATOM	5431	CA	ALA	L	248	11.023	51.262	32.222	1.00	35.52	L C
ATOM	5432	CB	ALA	L	248	12.534	51.054	32.459	1.00	1.00	L C
ATOM	5433	C	ALA	L	248	10.788	51.816	30.833	1.00	34.23	L C
ATOM	5434	O	ALA	L	248	10.407	51.096	29.914	1.00	30.90	L O
ATOM	5435	N	GLY	L	249	11.014	53.109	30.683	1.00	23.48	L N
ATOM	5436	CA	GLY	L	249	10.828	53.717	29.388	1.00	15.70	L C
ATOM	5437	C	GLY	L	249	11.426	55.103	29.360	1.00	19.93	L C
ATOM	5438	O	GLY	L	249	11.902	55.604	30.389	1.00	17.75	L O
ATOM	5439	N	ILE	L	250	11.420	55.726	28.186	1.00	26.00	L N
ATOM	5440	CA	ILE	L	250	11.968	57.068	28.061	1.00	26.00	L C
ATOM	5441	CB	ILE	L	250	12.962	57.159	26.892	1.00	24.98	L C
ATOM	5442	CG2	ILE	L	250	13.485	58.585	26.758	1.00	24.98	L C
ATOM	5443	CG1	ILE	L	250	14.111	56.173	27.131	1.00	24.98	L C
ATOM	5444	CD1	ILE	L	250	15.205	56.225	26.085	1.00	24.98	L C
ATOM	5445	C	ILE	L	250	10.818	58.015	27.819	1.00	26.00	L C
ATOM	5446	O	ILE	L	250	9.854	57.668	27.142	1.00	26.07	L O
ATOM	5447	N	ALA	L	251	10.907	59.210	28.382	1.00	21.38	L N
ATOM	5448	CA	ALA	L	251	9.840	60.185	28.207	1.00	22.68	L C
ATOM	5449	CB	ALA	L	251	8.721	59.935	29.217	1.00	27.01	L C
ATOM	5450	C	ALA	L	251	10.396	61.573	28.393	1.00	25.89	L C
ATOM	5451	O	ALA	L	251	11.308	61.774	29.190	1.00	25.42	L O
ATOM	5452	N	LYS	L	252	9.856	62.533	27.655	1.00	27.88	L N
ATOM	5453	CA	LYS	L	252	10.316	63.900	27.790	1.00	28.03	L C
ATOM	5454	CB	LYS	L	252	10.204	64.628	26.462	1.00	37.87	L C
ATOM	5455	CG	LYS	L	252	10.741	66.034	26.504	1.00	38.35	L C
ATOM	5456	CD	LYS	L	252	10.989	66.560	25.103	1.00	38.35	L C
ATOM	5457	CE	LYS	L	252	11.481	68.005	25.103	1.00	38.35	L C
ATOM	5458	NZ	LYS	L	252	10.426	68.953	25.575	1.00	38.35	L N
ATOM	5459	C	LYS	L	252	9.447	64.577	28.842	1.00	28.65	L C
ATOM	5460	O	LYS	L	252	8.235	64.635	28.705	1.00	31.53	L O
ATOM	5461	N	LEU	L	253	10.071	65.061	29.906	1.00	19.88	L N
ATOM	5462	CA	LEU	L	253	9.353	65.722	30.979	1.00	19.61	L C
ATOM	5463	CB	LEU	L	253	9.764	65.127	32.325	1.00	37.85	L C
ATOM	5464	CG	LEU	L	253	9.245	63.762	32.790	1.00	39.39	L C
ATOM	5465	CD1	LEU	L	253	8.606	63.004	31.649	1.00	34.19	L C
ATOM	5466	CD2	LEU	L	253	10.404	62.985	33.419	1.00	35.69	L C
ATOM	5467	C	LEU	L	253	9.680	67.208	30.978	1.00	20.97	L C
ATOM	5468	O	LEU	L	253	10.767	67.608	30.526	1.00	18.55	L O
ATOM	5469	N	GLU	L	254	8.746	68.023	31.480	1.00	23.42	L N
ATOM	5470	CA	GLU	L	254	8.947	69.471	31.569	1.00	25.09	L C
ATOM	5471	CB	GLU	L	254	7.709	70.225	31.116	1.00	95.74	L C
ATOM	5472	CG	GLU	L	254	7.465	70.205	29.641	1.00	65.03	L C
ATOM	5473	CD	GLU	L	254	6.404	71.204	29.260	1.00	65.03	L C
ATOM	5474	OE1	GLU	L	254	6.619	72.417	29.483	1.00	65.03	L O
ATOM	5475	OE2	GLU	L	254	5.347	70.782	28.751	1.00	65.03	L O

Figure 8-84

ATOM	5476	C	GLU	L	254	9.240	69.863	33.006	1.00	25.88	L C
ATOM	5477	O	GLU	L	254	8.754	69.223	33.946	1.00	25.60	L O
ATOM	5478	N	GLU	L	255	10.044	70.907	33.181	1.00	28.14	L N
ATOM	5479	CA	GLU	L	255	10.354	71.371	34.526	1.00	27.04	L C
ATOM	5480	CB	GLU	L	255	11.152	72.668	34.491	1.00	56.78	L C
ATOM	5481	CG	GLU	L	255	11.286	73.307	35.857	1.00	56.78	L C
ATOM	5482	CD	GLU	L	255	12.030	74.619	35.817	1.00	56.78	L C
ATOM	5483	OE1	GLU	L	255	12.190	75.235	36.894	1.00	56.78	L O
ATOM	5484	OE2	GLU	L	255	12.454	75.029	34.714	1.00	56.78	L O
ATOM	5485	C	GLU	L	255	9.031	71.621	35.236	1.00	29.49	L C
ATOM	5486	O	GLU	L	255	8.159	72.299	34.707	1.00	32.72	L O
ATOM	5487	N	GLY	L	256	8.882	71.058	36.425	1.00	18.79	L N
ATOM	5488	CA	GLY	L	256	7.656	71.242	37.161	1.00	18.79	L C
ATOM	5489	C	GLY	L	256	6.880	69.950	37.233	1.00	18.79	L C
ATOM	5490	O	GLY	L	256	6.057	69.764	38.142	1.00	18.79	L O
ATOM	5491	N	ASP	L	257	7.124	69.058	36.276	1.00	28.16	L N
ATOM	5492	CA	ASP	L	257	6.434	67.772	36.265	1.00	31.44	L C
ATOM	5493	CB	ASP	L	257	6.732	66.985	34.985	1.00	41.03	L C
ATOM	5494	CG	ASP	L	257	6.063	67.566	33.768	1.00	41.03	L C
ATOM	5495	OD1	ASP	L	257	5.040	68.262	33.927	1.00	41.03	L O
ATOM	5496	OD2	ASP	L	257	6.555	67.308	32.651	1.00	41.03	L O
ATOM	5497	C	ASP	L	257	6.849	66.913	37.453	1.00	31.23	L C
ATOM	5498	O	ASP	L	257	7.915	67.104	38.048	1.00	35.69	L O
ATOM	5499	N	GLU	L	258	5.988	65.964	37.791	1.00	27.14	L N
ATOM	5500	CA	GLU	L	258	6.251	65.044	38.877	1.00	23.80	L C
ATOM	5501	CB	GLU	L	258	5.353	65.357	40.069	1.00	37.75	L C
ATOM	5502	CG	GLU	L	258	5.746	66.595	40.851	1.00	37.75	L C
ATOM	5503	CD	GLU	L	258	4.837	66.832	42.052	1.00	37.75	L C
ATOM	5504	OE1	GLU	L	258	5.179	67.679	42.915	1.00	37.75	L O
ATOM	5505	OE2	GLU	L	258	3.772	66.175	42.137	1.00	37.75	L O
ATOM	5506	C	GLU	L	258	5.991	63.621	38.390	1.00	22.51	L C
ATOM	5507	O	GLU	L	258	5.114	63.389	37.547	1.00	22.51	L O
ATOM	5508	N	LEU	L	259	6.775	62.674	38.893	1.00	23.71	L N
ATOM	5509	CA	LEU	L	259	6.594	61.271	38.536	1.00	20.18	L C
ATOM	5510	CB	LEU	L	259	7.889	60.689	37.966	1.00	18.89	L C
ATOM	5511	CG	LEU	L	259	8.467	61.275	36.669	1.00	18.89	L C
ATOM	5512	CD1	LEU	L	259	9.866	60.700	36.457	1.00	18.89	L C
ATOM	5513	CD2	LEU	L	259	7.575	60.961	35.478	1.00	18.89	L C
ATOM	5514	C	LEU	L	259	6.229	60.559	39.845	1.00	17.52	L C
ATOM	5515	O	LEU	L	259	6.815	60.847	40.896	1.00	21.60	L O
ATOM	5516	N	GLN	L	260	5.250	59.658	39.792	1.00	26.38	L N
ATOM	5517	CA	GLN	L	260	4.827	58.920	40.979	1.00	25.14	L C
ATOM	5518	CB	GLN	L	260	3.564	59.538	41.560	1.00	35.04	L C
ATOM	5519	CG	GLN	L	260	2.314	59.192	40.769	1.00	35.04	L C
ATOM	5520	CD	GLN	L	260	1.074	59.916	41.266	1.00	35.04	L C
ATOM	5521	OE1	GLN	L	260	-0.051	59.561	40.900	1.00	35.04	L O
ATOM	5522	NE2	GLN	L	260	1.273	60.947	42.093	1.00	35.04	L N
ATOM	5523	C	GLN	L	260	4.538	57.483	40.580	1.00	25.13	L C
ATOM	5524	O	GLN	L	260	4.141	57.215	39.445	1.00	22.66	L O
ATOM	5525	N	LEU	L	261	4.736	56.554	41.504	1.00	33.82	L N
ATOM	5526	CA	LEU	L	261	4.468	55.148	41.215	1.00	34.13	L C
ATOM	5527	CB	LEU	L	261	5.650	54.280	41.651	1.00	30.18	L C
ATOM	5528	CG	LEU	L	261	5.620	52.831	41.162	1.00	30.18	L C
ATOM	5529	CD1	LEU	L	261	7.030	52.265	41.212	1.00	30.18	L C
ATOM	5530	CD2	LEU	L	261	4.656	52.003	41.997	1.00	30.18	L C
ATOM	5531	C	LEU	L	261	3.206	54.754	41.973	1.00	37.80	L C
ATOM	5532	O	LEU	L	261	3.179	54.795	43.202	1.00	38.47	L O
ATOM	5533	N	ALA	L	262	2.165	54.371	41.240	1.00	27.37	L N
ATOM	5534	CA	ALA	L	262	0.897	54.012	41.862	1.00	29.77	L C
ATOM	5535	CB	ALA	L	262	-0.165	55.010	41.443	1.00	58.76	L C
ATOM	5536	C	ALA	L	262	0.397	52.600	41.590	1.00	29.07	L C
ATOM	5537	O	ALA	L	262	0.464	52.105	40.462	1.00	29.10	L O
ATOM	5538	N	ILE	L	263	-0.117	51.960	42.637	1.00	21.72	L N
ATOM	5539	CA	ILE	L	263	-0.676	50.614	42.533	1.00	20.76	L C
ATOM	5540	CB	ILE	L	263	-0.189	49.732	43.683	1.00	20.88	L C
ATOM	5541	CG2	ILE	L	263	-0.831	48.360	43.589	1.00	20.88	L C

Figure 8-85

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ATOM 5542  CG1 ILE L 263       1.334  49.627  43.627  1.00 20.88      L    C
ATOM 5543  CD1 ILE L 263       1.953  48.966  44.838  1.00 20.88      L    C
ATOM 5544  C   ILE L 263      -2.201  50.723  42.591  1.00 19.08      L    C
ATOM 5545  O   ILE L 263      -2.756  51.122  43.606  1.00 18.83      L    O
ATOM 5546  N   PRO L 264      -2.891  50.375  41.494  1.00 47.96      L    N
ATOM 5547  CD  PRO L 264      -2.273  49.960  40.230  1.00 33.94      L    C
ATOM 5548  CA  PRO L 264      -4.350  50.420  41.349  1.00 47.96      L    C
ATOM 5549  CB  PRO L 264      -4.559  50.209  39.848  1.00 33.94      L    C
ATOM 5550  CG  PRO L 264      -3.229  50.540  39.239  1.00 33.94      L    C
ATOM 5551  C   PRO L 264      -5.068  49.356  42.158  1.00 47.96      L    C
ATOM 5552  O   PRO L 264      -5.777  48.519  41.602  1.00 47.96      L    O
ATOM 5553  N   ARG L 265      -4.907  49.404  43.470  1.00 35.65      L    N
ATOM 5554  CA  ARG L 265      -5.520  48.416  44.344  1.00 35.65      L    C
ATOM 5555  CB  ARG L 265      -4.671  47.144  44.311  1.00 75.86      L    C
ATOM 5556  CG  ARG L 265      -5.110  46.058  45.246  1.00 75.86      L    C
ATOM 5557  CD  ARG L 265      -6.265  45.291  44.682  1.00 75.86      L    C
ATOM 5558  NE  ARG L 265      -6.704  44.275  45.628  1.00 75.86      L    N
ATOM 5559  CZ  ARG L 265      -7.694  43.419  45.395  1.00 75.86      L    C
ATOM 5560  NH1 ARG L 265      -8.346  43.458  44.237  1.00 75.86      L    N
ATOM 5561  NH2 ARG L 265      -8.036  42.532  46.325  1.00 75.86      L    N
ATOM 5562  C   ARG L 265      -5.577  48.976  45.764  1.00 35.65      L    C
ATOM 5563  O   ARG L 265      -4.646  49.663  46.208  1.00 35.65      L    O
ATOM 5564  N   GLU L 266      -6.668  48.706  46.479  1.00 32.53      L    N
ATOM 5565  CA  GLU L 266      -6.780  49.193  47.854  1.00 32.53      L    C
ATOM 5566  CB  GLU L 266      -8.243  49.248  48.293  1.00122.45      L    C
ATOM 5567  CG  GLU L 266      -8.993  50.440  47.715  1.00122.45      L    C
ATOM 5568  CD  GLU L 266     -10.416  50.536  48.215  1.00122.45      L    C
ATOM 5569  OE1 GLU L 266     -10.619  50.509  49.448  1.00122.45      L    O
ATOM 5570  OE2 GLU L 266     -11.332  50.644  47.376  1.00122.45      L    O
ATOM 5571  C   GLU L 266      -5.976  48.249  48.737  1.00 32.53      L    C
ATOM 5572  O   GLU L 266      -6.184  47.041  48.716  1.00 32.53      L    O
ATOM 5573  N   ASN L 267      -5.035  48.805  49.490  1.00 56.49      L    N
ATOM 5574  CA  ASN L 267      -4.176  47.997  50.344  1.00 56.49      L    C
ATOM 5575  CB  ASN L 267      -4.985  47.375  51.475  1.00 65.55      L    C
ATOM 5576  CG  ASN L 267      -5.633  48.425  52.350  1.00 65.55      L    C
ATOM 5577  OD1 ASN L 267      -6.655  49.006  51.984  1.00 65.55      L    O
ATOM 5578  ND2 ASN L 267      -5.023  48.699  53.501  1.00 65.55      L    N
ATOM 5579  C   ASN L 267      -3.529  46.927  49.483  1.00 56.49      L    C
ATOM 5580  O   ASN L 267      -3.808  45.740  49.617  1.00 56.49      L    O
ATOM 5581  N   ALA L 268      -2.658  47.390  48.591  1.00116.60      L    N
ATOM 5582  CA  ALA L 268      -1.940  46.551  47.644  1.00116.60      L    C
ATOM 5583  CB  ALA L 268      -0.745  47.308  47.092  1.00196.45      L    C
ATOM 5584  C   ALA L 268      -1.479  45.199  48.148  1.00116.60      L    C
ATOM 5585  O   ALA L 268      -1.920  44.169  47.640  1.00116.60      L    O
ATOM 5586  N   GLN L 269      -0.586  45.207  49.133  1.00 52.80      L    N
ATOM 5587  CA  GLN L 269      -0.011  43.974  49.681  1.00 50.73      L    C
ATOM 5588  CB  GLN L 269      -0.952  42.779  49.476  1.00 68.94      L    C
ATOM 5589  CG  GLN L 269      -0.866  41.730  50.553  1.00 61.59      L    C
ATOM 5590  CD  GLN L 269      -1.133  42.313  51.929  1.00 61.59      L    C
ATOM 5591  OE1 GLN L 269      -1.998  43.179  52.091  1.00 61.59      L    O
ATOM 5592  NE2 GLN L 269      -0.397  41.835  52.929  1.00 61.59      L    N
ATOM 5593  C   GLN L 269       1.277  43.753  48.889  1.00 51.42      L    C
ATOM 5594  O   GLN L 269       1.388  42.820  48.090  1.00 50.01      L    O
ATOM 5595  N   ILE L 270       2.246  44.632  49.115  1.00 40.30      L    N
ATOM 5596  CA  ILE L 270       3.512  44.582  48.410  1.00 38.51      L    C
ATOM 5597  CB  ILE L 270       3.768  45.920  47.727  1.00 33.31      L    C
ATOM 5598  CG2 ILE L 270       2.632  46.205  46.735  1.00 36.87      L    C
ATOM 5599  CG1 ILE L 270       3.844  47.029  48.777  1.00 36.87      L    C
ATOM 5600  CD1 ILE L 270       4.220  48.393  48.207  1.00 33.31      L    C
ATOM 5601  C   ILE L 270       4.677  44.214  49.317  1.00 38.15      L    C
ATOM 5602  O   ILE L 270       4.460  43.694  50.400  1.00 36.13      L    O
ATOM 5603  N   SER L 271       5.910  44.489  48.902  1.00 52.16      L    N
ATOM 5604  CA  SER L 271       7.032  44.080  49.726  1.00 52.82      L    C
ATOM 5605  CB  SER L 271       8.059  43.351  48.879  1.00 31.11      L    C
ATOM 5606  OG  SER L 271       9.010  42.715  49.712  1.00 25.87      L    O
ATOM 5607  C   SER L 271       7.754  45.093  50.586  1.00 50.13      L    C
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Figure 8-86

ATOM	5608	O	SER	L	271	8.234	44.742	51.659	1.00	51.49	L	O
ATOM	5609	N	LEU	L	272	7.863	46.335	50.141	1.00	25.65	L	N
ATOM	5610	CA	LEU	L	272	8.557	47.345	50.956	1.00	24.15	L	C
ATOM	5611	CB	LEU	L	272	7.861	47.547	52.314	1.00	29.26	L	C
ATOM	5612	CG	LEU	L	272	6.592	48.388	52.357	1.00	38.41	L	C
ATOM	5613	CD1	LEU	L	272	6.927	49.804	51.976	1.00	38.41	L	C
ATOM	5614	CD2	LEU	L	272	5.560	47.817	51.403	1.00	38.41	L	C
ATOM	5615	C	LEU	L	272	10.029	47.028	51.215	1.00	30.51	L	C
ATOM	5616	O	LEU	L	272	10.689	47.738	51.978	1.00	28.91	L	O
ATOM	5617	N	ASP	L	273	10.538	45.968	50.589	1.00	38.97	L	N
ATOM	5618	CA	ASP	L	273	11.945	45.585	50.726	1.00	34.14	L	C
ATOM	5619	CB	ASP	L	273	12.105	44.123	50.336	1.00	84.26	L	C
ATOM	5620	CG	ASP	L	273	12.969	43.360	51.307	1.00	84.26	L	C
ATOM	5621	OD1	ASP	L	273	12.684	43.421	52.524	1.00	84.26	L	O
ATOM	5622	OD2	ASP	L	273	13.923	42.698	50.850	1.00	84.26	L	O
ATOM	5623	C	ASP	L	273	12.739	46.494	49.765	1.00	35.80	L	C
ATOM	5624	O	ASP	L	273	12.603	46.392	48.547	1.00	39.13	L	O
ATOM	5625	N	GLY	L	274	13.552	47.385	50.322	1.00	50.94	L	N
ATOM	5626	CA	GLY	L	274	14.315	48.331	49.518	1.00	50.94	L	C
ATOM	5627	C	GLY	L	274	15.042	47.873	48.266	1.00	50.94	L	C
ATOM	5628	O	GLY	L	274	15.314	48.671	47.369	1.00	50.94	L	O
ATOM	5629	N	ASP	L	275	15.354	46.587	48.203	1.00	45.95	L	N
ATOM	5630	CA	ASP	L	275	16.079	46.014	47.077	1.00	45.95	L	C
ATOM	5631	CB	ASP	L	275	17.122	45.020	47.591	1.00	41.03	L	C
ATOM	5632	CG	ASP	L	275	16.488	43.795	48.245	1.00	41.03	L	C
ATOM	5633	OD1	ASP	L	275	15.246	43.751	48.372	1.00	41.03	L	O
ATOM	5634	OD2	ASP	L	275	17.223	42.871	48.632	1.00	41.03	L	O
ATOM	5635	C	ASP	L	275	15.184	45.297	46.077	1.00	45.95	L	C
ATOM	5636	O	ASP	L	275	15.682	44.624	45.163	1.00	45.95	L	O
ATOM	5637	N	VAL	L	276	13.871	45.409	46.244	1.00	25.09	L	N
ATOM	5638	CA	VAL	L	276	12.976	44.744	45.309	1.00	24.20	L	C
ATOM	5639	CB	VAL	L	276	12.388	43.437	45.914	1.00	32.49	L	C
ATOM	5640	CG1	VAL	L	276	11.349	43.755	46.989	1.00	32.49	L	C
ATOM	5641	CG2	VAL	L	276	11.794	42.575	44.796	1.00	32.49	L	C
ATOM	5642	C	VAL	L	276	11.862	45.684	44.870	1.00	22.31	L	C
ATOM	5643	O	VAL	L	276	11.223	45.465	43.845	1.00	22.70	L	O
ATOM	5644	N	THR	L	277	11.643	46.738	45.650	1.00	27.75	L	N
ATOM	5645	CA	THR	L	277	10.628	47.740	45.329	1.00	27.84	L	C
ATOM	5646	CB	THR	L	277	9.487	47.760	46.365	1.00	36.44	L	C
ATOM	5647	OG1	THR	L	277	8.775	46.516	46.320	1.00	37.17	L	O
ATOM	5648	CG2	THR	L	277	8.529	48.894	46.070	1.00	37.87	L	C
ATOM	5649	C	THR	L	277	11.314	49.105	45.310	1.00	26.11	L	C
ATOM	5650	O	THR	L	277	11.547	49.700	46.357	1.00	28.29	L	O
ATOM	5651	N	PHE	L	278	11.644	49.585	44.110	1.00	23.78	L	N
ATOM	5652	CA	PHE	L	278	12.332	50.863	43.936	1.00	17.95	L	C
ATOM	5653	CB	PHE	L	278	13.835	50.634	43.755	1.00	28.19	L	C
ATOM	5654	CG	PHE	L	278	14.168	49.523	42.794	1.00	28.19	L	C
ATOM	5655	CD1	PHE	L	278	14.380	49.788	41.444	1.00	28.19	L	C
ATOM	5656	CD2	PHE	L	278	14.237	48.205	43.240	1.00	28.19	L	C
ATOM	5657	CE1	PHE	L	278	14.656	48.759	40.555	1.00	28.19	L	C
ATOM	5658	CE2	PHE	L	278	14.509	47.171	42.366	1.00	28.19	L	C
ATOM	5659	CZ	PHE	L	278	14.720	47.446	41.015	1.00	28.19	L	C
ATOM	5660	C	PHE	L	278	11.778	51.620	42.753	1.00	20.41	L	C
ATOM	5661	O	PHE	L	278	11.102	51.055	41.898	1.00	25.57	L	O
ATOM	5662	N	PHE	L	279	12.101	52.904	42.706	1.00	29.38	L	N
ATOM	5663	CA	PHE	L	279	11.606	53.803	41.674	1.00	28.78	L	C
ATOM	5664	CB	PHE	L	279	10.384	54.520	42.263	1.00	37.13	L	C
ATOM	5665	CG	PHE	L	279	9.699	55.457	41.331	1.00	34.20	L	C
ATOM	5666	CD1	PHE	L	279	9.581	55.164	39.982	1.00	36.68	L	C
ATOM	5667	CD2	PHE	L	279	9.102	56.614	41.825	1.00	31.60	L	C
ATOM	5668	CE1	PHE	L	279	8.874	56.012	39.135	1.00	36.97	L	C
ATOM	5669	CE2	PHE	L	279	8.393	57.467	40.991	1.00	32.34	L	C
ATOM	5670	CZ	PHE	L	279	8.278	57.167	39.646	1.00	34.75	L	C
ATOM	5671	C	PHE	L	279	12.745	54.767	41.351	1.00	32.76	L	C
ATOM	5672	O	PHE	L	279	13.443	55.225	42.256	1.00	30.27	L	O
ATOM	5673	N	GLY	L	280	12.955	55.062	40.072	1.00	30.75	L	N

Figure 8-87

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ATOM 5674  CA  GLY L 280      14.046  55.960  39.729  1.00 31.44      L    C
ATOM 5675  C   GLY L 280      13.983  56.616  38.368  1.00 31.32      L    C
ATOM 5676  O   GLY L 280      13.241  56.189  37.484  1.00 30.99      L    O
ATOM 5677  N   ALA L 281      14.784  57.662  38.203  1.00  7.17      L    N
ATOM 5678  CA  ALA L 281      14.828  58.396  36.944  1.00  7.17      L    C
ATOM 5679  CB  ALA L 281      13.907  59.615  37.007  1.00 33.10      L    C
ATOM 5680  C   ALA L 281      16.253  58.836  36.652  1.00  7.17      L    C
ATOM 5681  O   ALA L 281      16.972  59.310  37.545  1.00  7.17      L    O
ATOM 5682  N   LEU L 282      16.646  58.678  35.392  1.00 28.19      L    N
ATOM 5683  CA  LEU L 282      17.983  59.040  34.940  1.00 26.08      L    C
ATOM 5684  CB  LEU L 282      18.708  57.783  34.462  1.00 19.76      L    C
ATOM 5685  CG  LEU L 282      20.199  57.830  34.159  1.00 23.76      L    C
ATOM 5686  CD1 LEU L 282      20.597  56.494  33.605  1.00 20.19      L    C
ATOM 5687  CD2 LEU L 282      20.517  58.921  33.166  1.00 25.66      L    C
ATOM 5688  C   LEU L 282      17.832  60.011  33.781  1.00 26.95      L    C
ATOM 5689  O   LEU L 282      17.094  59.734  32.825  1.00 26.28      L    O
ATOM 5690  N   LYS L 283      18.523  61.146  33.849  1.00 24.17      L    N
ATOM 5691  CA  LYS L 283      18.413  62.110  32.760  1.00 25.68      L    C
ATOM 5692  CB  LYS L 283      18.682  63.532  33.236  1.00 44.71      L    C
ATOM 5693  CG  LYS L 283      18.431  64.534  32.135  1.00 48.38      L    C
ATOM 5694  CD  LYS L 283      18.636  65.955  32.583  1.00 43.23      L    C
ATOM 5695  CE  LYS L 283      18.261  66.904  31.465  1.00 42.63      L    C
ATOM 5696  NZ  LYS L 283      18.480  68.320  31.853  1.00 44.55      L    N
ATOM 5697  C   LYS L 283      19.353  61.787  31.601  1.00 28.71      L    C
ATOM 5698  O   LYS L 283      20.569  61.719  31.768  1.00 27.78      L    O
ATOM 5699  N   LEU L 284      18.770  61.578  30.426  1.00 34.01      L    N
ATOM 5700  CA  LEU L 284      19.542  61.277  29.237  1.00 37.36      L    C
ATOM 5701  CB  LEU L 284      18.619  60.830  28.107  1.00 24.50      L    C
ATOM 5702  CG  LEU L 284      17.909  59.522  28.427  1.00 21.79      L    C
ATOM 5703  CD1 LEU L 284      17.001  59.107  27.282  1.00 19.73      L    C
ATOM 5704  CD2 LEU L 284      18.964  58.467  28.692  1.00 23.17      L    C
ATOM 5705  C   LEU L 284      20.295  62.520  28.820  1.00 40.03      L    C
ATOM 5706  O   LEU L 284      19.736  63.615  28.779  1.00 41.82      L    O
ATOM 5707  N   LEU L 285      21.571  62.344  28.512  1.00 35.97      L    N
ATOM 5708  CA  LEU L 285      22.412  63.454  28.096  1.00 35.97      L    C
ATOM 5709  CB  LEU L 285      23.856  62.990  27.943  1.00 53.75      L    C
ATOM 5710  CG  LEU L 285      24.876  64.084  28.224  1.00 53.75      L    C
ATOM 5711  CD1 LEU L 285      24.866  64.420  29.710  1.00 53.75      L    C
ATOM 5712  CD2 LEU L 285      26.243  63.609  27.803  1.00 53.75      L    C
ATOM 5713  C   LEU L 285      21.912  64.021  26.774  1.00 35.97      L    C
ATOM 5714  O   LEU L 285      21.939  65.252  26.603  1.00 37.43      L    O
ATOM 5715  OXT LEU L 285      21.506  63.226  25.909  1.00 39.61      L    O
ATOM 5716  CB  VAL M 142      33.545  61.898  25.849  1.00 46.81      M    C
ATOM 5717  CG1 VAL M 142      33.829  63.218  26.549  1.00 46.81      M    C
ATOM 5718  CG2 VAL M 142      34.821  61.311  25.241  1.00 46.81      M    C
ATOM 5719  C   VAL M 142      32.391  59.721  26.053  1.00 87.36      M    C
ATOM 5720  O   VAL M 142      31.589  59.900  25.137  1.00 87.36      M    O
ATOM 5721  N   VAL M 142      33.915  60.490  27.887  1.00 87.36      M    N
ATOM 5722  CA  VAL M 142      32.924  60.901  26.851  1.00 87.36      M    C
ATOM 5723  N   THR M 143      32.824  58.515  26.405  1.00 77.98      M    N
ATOM 5724  CA  THR M 143      32.395  57.332  25.678  1.00 77.98      M    C
ATOM 5725  CB  THR M 143      33.586  56.489  25.245  1.00 71.02      M    C
ATOM 5726  OG1 THR M 143      34.413  56.236  26.383  1.00 71.02      M    O
ATOM 5727  CG2 THR M 143      34.389  57.205  24.176  1.00 71.02      M    C
ATOM 5728  C   THR M 143      31.434  56.422  26.415  1.00 77.98      M    C
ATOM 5729  O   THR M 143      30.892  55.497  25.816  1.00 77.98      M    O
ATOM 5730  N   GLN M 144      31.230  56.652  27.707  1.00 51.10      M    N
ATOM 5731  CA  GLN M 144      30.285  55.819  28.464  1.00 41.72      M    C
ATOM 5732  CB  GLN M 144      28.856  56.089  27.957  1.00 77.71      M    C
ATOM 5733  CG  GLN M 144      27.766  55.938  29.005  1.00 77.71      M    C
ATOM 5734  CD  GLN M 144      26.404  56.414  28.521  1.00 77.71      M    C
ATOM 5735  OE1 GLN M 144      25.464  56.572  29.313  1.00 24.92      M    O
ATOM 5736  NE2 GLN M 144      26.287  56.642  27.219  1.00 24.92      M    N
ATOM 5737  C   GLN M 144      30.602  54.316  28.357  1.00 38.91      M    C
ATOM 5738  O   GLN M 144      30.000  53.605  27.551  1.00 33.99      M    O
ATOM 5739  N   ASP M 145      31.542  53.834  29.170  1.00 33.21      M    N
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Figure 8-88

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ATOM 5740  CA  ASP M 145      31.923  52.419  29.141  1.00 32.92      M    C
ATOM 5741  CB  ASP M 145      33.098  52.133  30.084  1.00 31.76      M    C
ATOM 5742  CG  ASP M 145      34.278  53.049  29.858  1.00 49.67      M    C
ATOM 5743  OD1 ASP M 145      34.627  53.296  28.691  1.00 49.67      M    O
ATOM 5744  OD2 ASP M 145      34.871  53.511  30.856  1.00 49.67      M    O
ATOM 5745  C   ASP M 145      30.781  51.498  29.550  1.00 30.96      M    C
ATOM 5746  O   ASP M 145      29.839  51.912  30.233  1.00 29.93      M    O
ATOM 5747  N   CYS M 146      30.884  50.239  29.144  1.00 22.86      M    N
ATOM 5748  CA  CYS M 146      29.881  49.232  29.482  1.00 22.43      M    C
ATOM 5749  CB  CYS M 146      28.565  49.508  28.747  1.00 23.44      M    C
ATOM 5750  SG  CYS M 146      28.768  49.705  26.971  1.00 34.76      M    S
ATOM 5751  C   CYS M 146      30.383  47.832  29.130  1.00 23.80      M    C
ATOM 5752  O   CYS M 146      31.172  47.643  28.202  1.00 21.72      M    O
ATOM 5753  N   LEU M 147      29.922  46.848  29.883  1.00 33.16      M    N
ATOM 5754  CA  LEU M 147      30.327  45.476  29.650  1.00 33.16      M    C
ATOM 5755  CB  LEU M 147      31.425  45.084  30.636  1.00 13.19      M    C
ATOM 5756  CG  LEU M 147      31.860  43.622  30.632  1.00 13.19      M    C
ATOM 5757  CD1 LEU M 147      33.256  43.540  31.204  1.00 17.72      M    C
ATOM 5758  CD2 LEU M 147      30.885  42.763  31.426  1.00 17.72      M    C
ATOM 5759  C   LEU M 147      29.111  44.592  29.833  1.00 33.16      M    C
ATOM 5760  O   LEU M 147      28.297  44.824  30.724  1.00 34.32      M    O
ATOM 5761  N   GLN M 148      28.992  43.573  28.996  1.00 30.62      M    N
ATOM 5762  CA  GLN M 148      27.852  42.672  29.073  1.00 30.64      M    C
ATOM 5763  CB  GLN M 148      26.887  42.990  27.941  1.00 10.12      M    C
ATOM 5764  CG  GLN M 148      25.589  42.202  27.931  1.00 17.58      M    C
ATOM 5765  CD  GLN M 148      24.605  42.756  26.908  1.00 17.58      M    C
ATOM 5766  OE1 GLN M 148      23.740  43.575  27.233  1.00 17.58      M    O
ATOM 5767  NE2 GLN M 148      24.757  42.327  25.656  1.00 17.58      M    N
ATOM 5768  C   GLN M 148      28.250  41.210  29.001  1.00 31.76      M    C
ATOM 5769  O   GLN M 148      29.107  40.820  28.211  1.00 32.27      M    O
ATOM 5770  N   LEU M 149      27.611  40.407  29.840  1.00 29.59      M    N
ATOM 5771  CA  LEU M 149      27.857  38.977  29.899  1.00 28.32      M    C
ATOM 5772  CB  LEU M 149      28.205  38.572  31.336  1.00 21.96      M    C
ATOM 5773  CG  LEU M 149      29.637  38.633  31.880  1.00 21.96      M    C
ATOM 5774  CD1 LEU M 149      30.539  39.416  30.950  1.00 21.96      M    C
ATOM 5775  CD2 LEU M 149      29.608  39.242  33.287  1.00  9.26      M    C
ATOM 5776  C   LEU M 149      26.593  38.231  29.453  1.00 29.97      M    C
ATOM 5777  O   LEU M 149      25.474  38.691  29.685  1.00 30.36      M    O
ATOM 5778  N   ILE M 150      26.774  37.092  28.793  1.00 19.69      M    N
ATOM 5779  CA  ILE M 150      25.643  36.281  28.365  1.00 18.56      M    C
ATOM 5780  CB  ILE M 150      25.440  36.332  26.853  1.00 11.57      M    C
ATOM 5781  CG2 ILE M 150      25.251  37.760  26.423  1.00 11.57      M    C
ATOM 5782  CG1 ILE M 150      26.642  35.740  26.138  1.00 15.69      M    C
ATOM 5783  CD1 ILE M 150      26.571  35.890  24.644  1.00 15.69      M    C
ATOM 5784  C   ILE M 150      25.901  34.843  28.790  1.00 22.66      M    C
ATOM 5785  O   ILE M 150      27.043  34.393  28.830  1.00 23.71      M    O
ATOM 5786  N   ALA M 151      24.836  34.123  29.109  1.00 22.71      M    N
ATOM 5787  CA  ALA M 151      24.956  32.746  29.555  1.00 22.71      M    C
ATOM 5788  CB  ALA M 151      23.570  32.161  29.767  1.00  1.00      M    C
ATOM 5789  C   ALA M 151      25.767  31.861  28.609  1.00 22.71      M    C
ATOM 5790  O   ALA M 151      25.684  31.988  27.389  1.00 22.71      M    O
ATOM 5791  N   ASP M 152      26.565  30.972  29.190  1.00 43.63      M    N
ATOM 5792  CA  ASP M 152      27.380  30.047  28.415  1.00 43.63      M    C
ATOM 5793  CB  ASP M 152      28.754  29.893  29.068  1.00 52.37      M    C
ATOM 5794  CG  ASP M 152      29.634  28.891  28.347  1.00 52.37      M    C
ATOM 5795  OD1 ASP M 152      30.714  28.562  28.879  1.00 52.37      M    O
ATOM 5796  OD2 ASP M 152      29.249  28.434  27.251  1.00 52.37      M    O
ATOM 5797  C   ASP M 152      26.658  28.697  28.378  1.00 43.63      M    C
ATOM 5798  O   ASP M 152      26.716  27.916  29.325  1.00 43.63      M    O
ATOM 5799  N   SER M 153      25.972  28.429  27.278  1.00 34.72      M    N
ATOM 5800  CA  SER M 153      25.224  27.186  27.132  1.00 34.72      M    C
ATOM 5801  CB  SER M 153      24.312  27.272  25.905  1.00 41.40      M    C
ATOM 5802  OG  SER M 153      25.055  27.614  24.750  1.00 41.40      M    O
ATOM 5803  C   SER M 153      26.119  25.956  27.008  1.00 34.72      M    C
ATOM 5804  O   SER M 153      25.624  24.830  26.873  1.00 34.72      M    O
ATOM 5805  N   GLU M 154      27.430  26.175  27.060  1.00 41.18      M    N
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Figure 8-89

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ATOM 5806  CA  GLU M 154      28.400  25.095  26.924  1.00 41.18      M    C
ATOM 5807  CB  GLU M 154      29.624  25.604  26.167  1.00104.99      M    C
ATOM 5808  CG  GLU M 154      30.180  24.608  25.195  1.00104.99      M    C
ATOM 5809  CD  GLU M 154      29.220  24.348  24.060  1.00104.99      M    C
ATOM 5810  OE1 GLU M 154      29.013  25.272  23.248  1.00104.99      M    O
ATOM 5811  OE2 GLU M 154      28.667  23.229  23.985  1.00104.99      M    O
ATOM 5812  C   GLU M 154      28.849  24.532  28.271  1.00 41.18      M    C
ATOM 5813  O   GLU M 154      29.287  23.392  28.359  1.00 41.18      M    O
ATOM 5814  N   THR M 155      28.723  25.334  29.319  1.00 38.44      M    N
ATOM 5815  CA  THR M 155      29.153  24.943  30.654  1.00 38.44      M    C
ATOM 5816  CB  THR M 155      30.064  26.026  31.243  1.00 55.40      M    C
ATOM 5817  OG1 THR M 155      31.185  26.211  30.378  1.00 55.40      M    O
ATOM 5818  CG2 THR M 155      30.538  25.651  32.645  1.00 55.40      M    C
ATOM 5819  C   THR M 155      28.020  24.722  31.642  1.00 38.44      M    C
ATOM 5820  O   THR M 155      26.997  25.404  31.598  1.00 38.44      M    O
ATOM 5821  N   PRO M 156      28.196  23.767  32.563  1.00 38.71      M    N
ATOM 5822  CD  PRO M 156      29.303  22.807  32.694  1.00 91.23      M    C
ATOM 5823  CA  PRO M 156      27.160  23.499  33.562  1.00 38.71      M    C
ATOM 5824  CB  PRO M 156      27.621  22.190  34.184  1.00 91.23      M    C
ATOM 5825  CG  PRO M 156      29.110  22.303  34.101  1.00 91.23      M    C
ATOM 5826  C   PRO M 156      27.110  24.641  34.580  1.00 38.71      M    C
ATOM 5827  O   PRO M 156      28.110  25.325  34.813  1.00 38.71      M    O
ATOM 5828  N   THR M 157      25.945  24.844  35.179  1.00 39.72      M    N
ATOM 5829  CA  THR M 157      25.789  25.899  36.163  1.00 39.72      M    C
ATOM 5830  CB  THR M 157      24.348  25.965  36.645  1.00 27.24      M    C
ATOM 5831  OG1 THR M 157      24.037  24.794  37.412  1.00 27.24      M    O
ATOM 5832  CG2 THR M 157      23.421  26.036  35.449  1.00 27.24      M    C
ATOM 5833  C   THR M 157      26.704  25.639  37.349  1.00 39.72      M    C
ATOM 5834  O   THR M 157      26.952  24.493  37.700  1.00 39.72      M    O
ATOM 5835  N   ILE M 158      27.193  26.706  37.965  1.00 40.41      M    N
ATOM 5836  CA  ILE M 158      28.100  26.596  39.099  1.00 40.41      M    C
ATOM 5837  CB  ILE M 158      29.028  27.818  39.158  1.00 40.44      M    C
ATOM 5838  CG2 ILE M 158      30.046  27.648  40.267  1.00 40.44      M    C
ATOM 5839  CG1 ILE M 158      29.719  28.003  37.814  1.00 40.44      M    C
ATOM 5840  CD1 ILE M 158      30.573  29.241  37.747  1.00 40.44      M    C
ATOM 5841  C   ILE M 158      27.380  26.495  40.440  1.00 40.41      M    C
ATOM 5842  O   ILE M 158      26.509  27.307  40.740  1.00 40.41      M    O
ATOM 5843  N   GLN M 159      27.756  25.506  41.246  1.00 58.62      M    N
ATOM 5844  CA  GLN M 159      27.162  25.321  42.566  1.00 58.62      M    C
ATOM 5845  CB  GLN M 159      26.846  23.857  42.793  1.00 52.65      M    C
ATOM 5846  CG  GLN M 159      25.860  23.338  41.783  1.00 52.65      M    C
ATOM 5847  CD  GLN M 159      24.568  24.109  41.813  1.00 52.65      M    C
ATOM 5848  OE1 GLN M 159      23.886  24.209  40.805  1.00 52.65      M    O
ATOM 5849  NE2 GLN M 159      24.215  24.655  42.980  1.00 52.65      M    N
ATOM 5850  C   GLN M 159      28.148  25.798  43.611  1.00 58.62      M    C
ATOM 5851  O   GLN M 159      29.308  25.417  43.577  1.00 58.62      M    O
ATOM 5852  N   LYS M 160      27.692  26.623  44.545  1.00 51.30      M    N
ATOM 5853  CA  LYS M 160      28.592  27.152  45.555  1.00 51.30      M    C
ATOM 5854  CB  LYS M 160      29.547  28.144  44.891  1.00 82.19      M    C
ATOM 5855  CG  LYS M 160      30.618  28.706  45.791  1.00 55.57      M    C
ATOM 5856  CD  LYS M 160      31.587  29.560  44.985  1.00 55.57      M    C
ATOM 5857  CE  LYS M 160      32.762  30.057  45.836  1.00 55.57      M    C
ATOM 5858  NZ  LYS M 160      33.760  30.837  45.037  1.00 55.57      M    N
ATOM 5859  C   LYS M 160      27.840  27.833  46.690  1.00 51.30      M    C
ATOM 5860  O   LYS M 160      27.134  28.813  46.477  1.00 51.30      M    O
ATOM 5861  N   GLY M 161      27.992  27.301  47.896  1.00 75.74      M    N
ATOM 5862  CA  GLY M 161      27.335  27.881  49.051  1.00 75.74      M    C
ATOM 5863  C   GLY M 161      25.824  27.866  48.983  1.00 75.74      M    C
ATOM 5864  O   GLY M 161      25.179  28.861  49.319  1.00 75.74      M    O
ATOM 5865  N   SER M 162      25.257  26.742  48.552  1.00 70.03      M    N
ATOM 5866  CA  SER M 162      23.805  26.599  48.454  1.00 70.03      M    C
ATOM 5867  CB  SER M 162      23.149  26.899  49.806  1.00158.93      M    C
ATOM 5868  OG  SER M 162      21.752  26.673  49.757  1.00158.93      M    O
ATOM 5869  C   SER M 162      23.194  27.500  47.376  1.00 70.03      M    C
ATOM 5870  O   SER M 162      21.989  27.448  47.126  1.00 70.03      M    O
ATOM 5871  N   TYR M 163      24.024  28.339  46.760  1.00 53.22      M    N
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Figure 8-90

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ATOM 5872  CA  TYR M 163      23.577  29.214  45.686  1.00 53.22      M    C
ATOM 5873  CB  TYR M 163      24.279  30.571  45.732  1.00 62.29      M    C
ATOM 5874  CG  TYR M 163      23.753  31.567  46.735  1.00 62.29      M    C
ATOM 5875  CD1 TYR M 163      22.515  31.398  47.347  1.00 62.29      M    C
ATOM 5876  CE1 TYR M 163      22.020  32.353  48.238  1.00 62.29      M    C
ATOM 5877  CD2 TYR M 163      24.488  32.714  47.037  1.00 62.29      M    C
ATOM 5878  CE2 TYR M 163      24.006  33.674  47.921  1.00 62.29      M    C
ATOM 5879  CZ  TYR M 163      22.772  33.490  48.519  1.00 62.29      M    C
ATOM 5880  OH  TYR M 163      22.296  34.444  49.391  1.00 62.29      M    O
ATOM 5881  C   TYR M 163      23.957  28.546  44.372  1.00 53.22      M    C
ATOM 5882  O   TYR M 163      24.643  27.525  44.354  1.00 53.22      M    O
ATOM 5883  N   THR M 164      23.511  29.138  43.271  1.00 40.20      M    N
ATOM 5884  CA  THR M 164      23.826  28.632  41.944  1.00 40.20      M    C
ATOM 5885  CB  THR M 164      22.667  27.764  41.380  1.00 25.05      M    C
ATOM 5886  OG1 THR M 164      22.884  27.510  39.989  1.00 25.05      M    O
ATOM 5887  CG2 THR M 164      21.360  28.454  41.556  1.00 25.05      M    C
ATOM 5888  C   THR M 164      24.110  29.831  41.040  1.00 40.20      M    C
ATOM 5889  O   THR M 164      23.314  30.760  40.956  1.00 40.20      M    O
ATOM 5890  N   PHE M 165      25.264  29.806  40.383  1.00 21.79      M    N
ATOM 5891  CA  PHE M 165      25.681  30.889  39.510  1.00 21.79      M    C
ATOM 5892  CB  PHE M 165      27.059  31.367  39.927  1.00 12.91      M    C
ATOM 5893  CG  PHE M 165      27.136  31.749  41.366  1.00 12.91      M    C
ATOM 5894  CD1 PHE M 165      27.223  30.768  42.354  1.00 12.91      M    C
ATOM 5895  CD2 PHE M 165      27.073  33.091  41.743  1.00 12.91      M    C
ATOM 5896  CE1 PHE M 165      27.245  31.111  43.693  1.00 12.91      M    C
ATOM 5897  CE2 PHE M 165      27.093  33.451  43.082  1.00 12.91      M    C
ATOM 5898  CZ  PHE M 165      27.180  32.456  44.069  1.00 12.91      M    C
ATOM 5899  C   PHE M 165      25.714  30.443  38.074  1.00 21.79      M    C
ATOM 5900  O   PHE M 165      26.038  29.292  37.788  1.00 21.79      M    O
ATOM 5901  N   VAL M 166      25.379  31.344  37.160  1.00 22.17      M    N
ATOM 5902  CA  VAL M 166      25.398  30.970  35.757  1.00 22.17      M    C
ATOM 5903  CB  VAL M 166      24.304  31.735  34.919  1.00 19.31      M    C
ATOM 5904  CG1 VAL M 166      23.447  32.581  35.825  1.00 19.31      M    C
ATOM 5905  CG2 VAL M 166      24.938  32.590  33.840  1.00 19.31      M    C
ATOM 5906  C   VAL M 166      26.782  31.233  35.176  1.00 22.17      M    C
ATOM 5907  O   VAL M 166      27.463  32.189  35.550  1.00 22.17      M    O
ATOM 5908  N   PRO M 167      27.228  30.358  34.271  1.00 27.22      M    N
ATOM 5909  CD  PRO M 167      26.566  29.099  33.907  1.00 46.32      M    C
ATOM 5910  CA  PRO M 167      28.525  30.465  33.605  1.00 27.22      M    C
ATOM 5911  CB  PRO M 167      28.651  29.128  32.874  1.00 46.32      M    C
ATOM 5912  CG  PRO M 167      27.739  28.221  33.619  1.00 46.32      M    C
ATOM 5913  C   PRO M 167      28.426  31.624  32.610  1.00 27.22      M    C
ATOM 5914  O   PRO M 167      27.608  31.582  31.686  1.00 27.22      M    O
ATOM 5915  N   TRP M 168      29.238  32.656  32.786  1.00 35.73      M    N
ATOM 5916  CA  TRP M 168      29.184  33.783  31.863  1.00 36.96      M    C
ATOM 5917  CB  TRP M 168      29.361  35.116  32.603  1.00 33.08      M    C
ATOM 5918  CG  TRP M 168      28.290  35.387  33.598  1.00 27.34      M    C
ATOM 5919  CD2 TRP M 168      26.888  35.500  33.337  1.00 27.91      M    C
ATOM 5920  CE2 TRP M 168      26.249  35.704  34.581  1.00 27.30      M    C
ATOM 5921  CE3 TRP M 168      26.106  35.445  32.171  1.00 29.04      M    C
ATOM 5922  CD1 TRP M 168      28.442  35.527  34.943  1.00 30.19      M    C
ATOM 5923  NE1 TRP M 168      27.223  35.717  35.541  1.00 33.17      M    N
ATOM 5924  CZ2 TRP M 168      24.863  35.856  34.698  1.00 27.06      M    C
ATOM 5925  CZ3 TRP M 168      24.730  35.596  32.287  1.00 32.80      M    C
ATOM 5926  CH2 TRP M 168      24.123  35.799  33.546  1.00 31.01      M    C
ATOM 5927  C   TRP M 168      30.206  33.711  30.741  1.00 37.27      M    C
ATOM 5928  O   TRP M 168      31.302  33.177  30.881  1.00 38.93      M    O
ATOM 5929  N   LEU M 169      29.817  34.274  29.616  1.00 25.66      M    N
ATOM 5930  CA  LEU M 169      30.647  34.336  28.439  1.00 26.13      M    C
ATOM 5931  CB  LEU M 169      30.005  33.514  27.331  1.00 45.87      M    C
ATOM 5932  CG  LEU M 169      30.937  32.559  26.606  1.00 45.87      M    C
ATOM 5933  CD1 LEU M 169      30.123  31.497  25.909  1.00 45.87      M    C
ATOM 5934  CD2 LEU M 169      31.802  33.348  25.628  1.00 45.87      M    C
ATOM 5935  C   LEU M 169      30.616  35.825  28.106  1.00 26.76      M    C
ATOM 5936  O   LEU M 169      29.548  36.439  28.126  1.00 25.11      M    O
ATOM 5937  N   LEU M 170      31.772  36.419  27.824  1.00 37.08      M    N
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Figure 8-91

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ATOM 5938  CA  LEU M 170      31.809  37.848  27.532  1.00 37.08      M    C
ATOM 5939  CB  LEU M 170      33.242  38.364  27.499  1.00 39.65      M    C
ATOM 5940  CG  LEU M 170      33.292  39.832  27.069  1.00 39.65      M    C
ATOM 5941  CD1 LEU M 170      32.709  40.710  28.173  1.00 39.65      M    C
ATOM 5942  CD2 LEU M 170      34.713  40.241  26.776  1.00 39.65      M    C
ATOM 5943  C   LEU M 170      31.131  38.230  26.231  1.00 37.08      M    C
ATOM 5944  O   LEU M 170      31.625  37.917  25.151  1.00 37.83      M    O
ATOM 5945  N   SER M 171      29.998  38.915  26.341  1.00 31.97      M    N
ATOM 5946  CA  SER M 171      29.270  39.364  25.164  1.00 31.98      M    C
ATOM 5947  CB  SER M 171      27.928  39.979  25.554  1.00 30.82      M    C
ATOM 5948  OG  SER M 171      27.370  40.711  24.475  1.00 30.82      M    O
ATOM 5949  C   SER M 171      30.132  40.414  24.496  1.00 30.37      M    C
ATOM 5950  O   SER M 171      30.437  40.318  23.307  1.00 30.07      M    O
ATOM 5951  N   PHE M 172      30.522  41.418  25.274  1.00 28.47      M    N
ATOM 5952  CA  PHE M 172      31.365  42.482  24.768  1.00 24.99      M    C
ATOM 5953  CB  PHE M 172      30.620  43.325  23.727  1.00 51.48      M    C
ATOM 5954  CG  PHE M 172      29.706  44.342  24.321  1.00 30.14      M    C
ATOM 5955  CD1 PHE M 172      30.207  45.541  24.814  1.00 30.14      M    C
ATOM 5956  CD2 PHE M 172      28.345  44.081  24.452  1.00 30.14      M    C
ATOM 5957  CE1 PHE M 172      29.367  46.466  25.439  1.00 30.14      M    C
ATOM 5958  CE2 PHE M 172      27.494  45.001  25.075  1.00 30.14      M    C
ATOM 5959  CZ  PHE M 172      28.006  46.194  25.570  1.00 30.14      M    C
ATOM 5960  C   PHE M 172      31.798  43.350  25.937  1.00 26.53      M    C
ATOM 5961  O   PHE M 172      31.113  43.426  26.955  1.00 27.32      M    O
ATOM 5962  N   LYS M 173      32.951  43.991  25.781  1.00 33.13      M    N
ATOM 5963  CA  LYS M 173      33.512  44.878  26.790  1.00 32.17      M    C
ATOM 5964  CB  LYS M 173      34.778  44.272  27.380  1.00 33.93      M    C
ATOM 5965  CG  LYS M 173      35.606  45.217  28.222  1.00 52.93      M    C
ATOM 5966  CD  LYS M 173      36.905  44.537  28.624  1.00 52.93      M    C
ATOM 5967  CE  LYS M 173      37.754  45.423  29.509  1.00 52.93      M    C
ATOM 5968  NZ  LYS M 173      38.096  46.702  28.835  1.00 52.93      M    N
ATOM 5969  C   LYS M 173      33.850  46.141  26.036  1.00 33.95      M    C
ATOM 5970  O   LYS M 173      34.476  46.089  24.981  1.00 35.44      M    O
ATOM 5971  N   ARG M 174      33.425  47.274  26.567  1.00 26.99      M    N
ATOM 5972  CA  ARG M 174      33.668  48.541  25.907  1.00 26.99      M    C
ATOM 5973  CB  ARG M 174      32.370  49.059  25.282  1.00 25.49      M    C
ATOM 5974  CG  ARG M 174      32.538  50.325  24.482  1.00 25.49      M    C
ATOM 5975  CD  ARG M 174      31.223  51.003  24.239  1.00 25.49      M    C
ATOM 5976  NE  ARG M 174      31.383  52.186  23.399  1.00 25.49      M    N
ATOM 5977  CZ  ARG M 174      30.621  53.270  23.500  1.00 25.49      M    C
ATOM 5978  NH1 ARG M 174      29.655  53.314  24.409  1.00 25.49      M    N
ATOM 5979  NH2 ARG M 174      30.820  54.305  22.697  1.00 25.49      M    N
ATOM 5980  C   ARG M 174      34.173  49.546  26.917  1.00 26.99      M    C
ATOM 5981  O   ARG M 174      33.419  49.977  27.802  1.00 26.99      M    O
ATOM 5982  N   GLY M 175      35.444  49.917  26.803  1.00 34.89      M    N
ATOM 5983  CA  GLY M 175      35.984  50.894  27.727  1.00 34.89      M    C
ATOM 5984  C   GLY M 175      36.904  50.343  28.793  1.00 34.89      M    C
ATOM 5985  O   GLY M 175      37.129  49.134  28.875  1.00 34.89      M    O
ATOM 5986  N   SER M 176      37.424  51.252  29.615  1.00 43.14      M    N
ATOM 5987  CA  SER M 176      38.360  50.929  30.683  1.00 43.14      M    C
ATOM 5988  CB  SER M 176      39.209  52.157  31.006  1.00 68.27      M    C
ATOM 5989  OG  SER M 176      38.395  53.309  31.121  1.00 68.27      M    O
ATOM 5990  C   SER M 176      37.697  50.414  31.947  1.00 43.14      M    C
ATOM 5991  O   SER M 176      38.069  49.352  32.436  1.00 43.14      M    O
ATOM 5992  N   ALA M 177      36.735  51.163  32.486  1.00 67.25      M    N
ATOM 5993  CA  ALA M 177      36.029  50.739  33.698  1.00 67.25      M    C
ATOM 5994  CB  ALA M 177      35.045  51.786  34.135  1.00 13.20      M    C
ATOM 5995  C   ALA M 177      35.283  49.484  33.343  1.00 67.25      M    C
ATOM 5996  O   ALA M 177      34.929  49.289  32.183  1.00 67.25      M    O
ATOM 5997  N   LEU M 178      35.032  48.630  34.322  1.00 29.05      M    N
ATOM 5998  CA  LEU M 178      34.306  47.396  34.028  1.00 29.05      M    C
ATOM 5999  CB  LEU M 178      32.972  47.727  33.357  1.00 43.76      M    C
ATOM 6000  CG  LEU M 178      31.704  47.893  34.185  1.00 24.83      M    C
ATOM 6001  CD1 LEU M 178      31.997  48.438  35.583  1.00 24.83      M    C
ATOM 6002  CD2 LEU M 178      30.773  48.803  33.412  1.00 24.83      M    C
ATOM 6003  C   LEU M 178      35.042  46.402  33.129  1.00 29.05      M    C
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Figure 8-92

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ATOM 6004  O   LEU M 178      35.329  46.693  31.974  1.00 29.05      M    O
ATOM 6005  N   GLU M 179      35.347  45.229  33.664  1.00 44.70      M    N
ATOM 6006  CA  GLU M 179      35.985  44.163  32.901  1.00 44.70      M    C
ATOM 6007  CB  GLU M 179      37.508  44.332  32.834  1.00105.55      M    C
ATOM 6008  CG  GLU M 179      38.219  44.478  34.152  1.00 54.75      M    C
ATOM 6009  CD  GLU M 179      39.689  44.829  33.973  1.00 54.75      M    C
ATOM 6010  OE1 GLU M 179      39.986  45.904  33.400  1.00 54.75      M    O
ATOM 6011  OE2 GLU M 179      40.548  44.030  34.403  1.00 54.75      M    O
ATOM 6012  C   GLU M 179      35.577  42.896  33.635  1.00 44.70      M    C
ATOM 6013  O   GLU M 179      35.163  42.964  34.789  1.00 44.70      M    O
ATOM 6014  N   GLU M 180      35.646  41.749  32.971  1.00 46.38      M    N
ATOM 6015  CA  GLU M 180      35.226  40.507  33.607  1.00 46.38      M    C
ATOM 6016  CB  GLU M 180      34.763  39.512  32.544  1.00 33.64      M    C
ATOM 6017  CG  GLU M 180      34.522  38.103  33.048  1.00 33.64      M    C
ATOM 6018  CD  GLU M 180      34.028  37.179  31.948  1.00 33.64      M    C
ATOM 6019  OE1 GLU M 180      34.516  37.291  30.799  1.00 43.43      M    O
ATOM 6020  OE2 GLU M 180      33.160  36.330  32.236  1.00 43.43      M    O
ATOM 6021  C   GLU M 180      36.325  39.904  34.453  1.00 46.38      M    C
ATOM 6022  O   GLU M 180      37.420  39.655  33.959  1.00 46.38      M    O
ATOM 6023  N   LYS M 181      36.025  39.677  35.729  1.00 58.37      M    N
ATOM 6024  CA  LYS M 181      36.989  39.108  36.659  1.00 58.37      M    C
ATOM 6025  CB  LYS M 181      36.768  39.665  38.061  1.00 69.13      M    C
ATOM 6026  CG  LYS M 181      37.769  39.182  39.104  1.00 69.13      M    C
ATOM 6027  CD  LYS M 181      39.142  39.774  38.885  1.00 69.13      M    C
ATOM 6028  CE  LYS M 181      40.039  39.504  40.077  1.00 69.13      M    C
ATOM 6029  NZ  LYS M 181      41.296  40.293  39.998  1.00 69.13      M    N
ATOM 6030  C   LYS M 181      36.871  37.596  36.694  1.00 58.37      M    C
ATOM 6031  O   LYS M 181      37.258  36.913  35.750  1.00 58.37      M    O
ATOM 6032  N   GLU M 182      36.328  37.064  37.778  1.00 48.53      M    N
ATOM 6033  CA  GLU M 182      36.201  35.623  37.899  1.00 48.53      M    C
ATOM 6034  CB  GLU M 182      36.773  35.161  39.235  1.00 87.71      M    C
ATOM 6035  CG  GLU M 182      38.151  35.718  39.499  1.00 87.71      M    C
ATOM 6036  CD  GLU M 182      38.717  35.263  40.815  1.00 87.71      M    C
ATOM 6037  OE1 GLU M 182      39.094  34.079  40.915  1.00 87.71      M    O
ATOM 6038  OE2 GLU M 182      38.777  36.089  41.749  1.00 87.71      M    O
ATOM 6039  C   GLU M 182      34.742  35.272  37.797  1.00 48.53      M    C
ATOM 6040  O   GLU M 182      34.109  34.893  38.779  1.00 48.53      M    O
ATOM 6041  N   ASN M 183      34.215  35.407  36.589  1.00 24.07      M    N
ATOM 6042  CA  ASN M 183      32.820  35.130  36.310  1.00 24.07      M    C
ATOM 6043  CB  ASN M 183      32.414  33.753  36.823  1.00 27.63      M    C
ATOM 6044  CG  ASN M 183      31.102  33.287  36.231  1.00 27.63      M    C
ATOM 6045  OD1 ASN M 183      30.986  33.129  35.014  1.00 27.63      M    O
ATOM 6046  ND2 ASN M 183      30.100  33.074  37.085  1.00 27.63      M    N
ATOM 6047  C   ASN M 183      31.945  36.187  36.955  1.00 24.07      M    C
ATOM 6048  O   ASN M 183      30.760  35.965  37.206  1.00 24.07      M    O
ATOM 6049  N   LYS M 184      32.543  37.334  37.244  1.00 31.47      M    N
ATOM 6050  CA  LYS M 184      31.805  38.438  37.826  1.00 31.47      M    C
ATOM 6051  CB  LYS M 184      31.971  38.462  39.351  1.00 55.99      M    C
ATOM 6052  CG  LYS M 184      33.159  37.700  39.883  1.00 55.99      M    C
ATOM 6053  CD  LYS M 184      33.049  37.565  41.384  1.00 55.99      M    C
ATOM 6054  CE  LYS M 184      34.229  36.814  41.974  1.00 55.99      M    C
ATOM 6055  NZ  LYS M 184      34.147  36.759  43.471  1.00 55.99      M    N
ATOM 6056  C   LYS M 184      32.288  39.736  37.194  1.00 31.47      M    C
ATOM 6057  O   LYS M 184      33.352  39.770  36.572  1.00 31.47      M    O
ATOM 6058  N   ILE M 185      31.492  40.794  37.313  1.00 19.08      M    N
ATOM 6059  CA  ILE M 185      31.881  42.080  36.751  1.00 17.57      M    C
ATOM 6060  CB  ILE M 185      30.655  42.926  36.402  1.00 10.29      M    C
ATOM 6061  CG2 ILE M 185      31.095  44.284  35.894  1.00 10.29      M    C
ATOM 6062  CG1 ILE M 185      29.811  42.192  35.365  1.00 10.29      M    C
ATOM 6063  CD1 ILE M 185      28.479  42.868  35.063  1.00 10.29      M    C
ATOM 6064  C   ILE M 185      32.732  42.852  37.754  1.00 18.03      M    C
ATOM 6065  O   ILE M 185      32.309  43.085  38.893  1.00 21.22      M    O
ATOM 6066  N   LEU M 186      33.929  43.246  37.322  1.00 20.89      M    N
ATOM 6067  CA  LEU M 186      34.852  43.995  38.171  1.00 20.09      M    C
ATOM 6068  CB  LEU M 186      36.272  43.444  38.022  1.00 32.63      M    C
ATOM 6069  CG  LEU M 186      37.362  44.273  38.701  1.00 32.63      M    C
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Figure 8-93

ATOM	6070	CD1	LEU	M	186	37.034	44.429	40.176	1.00	32.63	M	C
ATOM	6071	CD2	LEU	M	186	38.704	43.599	38.515	1.00	32.63	M	C
ATOM	6072	C	LEU	M	186	34.853	45.483	37.844	1.00	17.23	M	C
ATOM	6073	O	LEU	M	186	35.082	45.875	36.698	1.00	24.16	M	O
ATOM	6074	N	VAL	M	187	34.593	46.309	38.854	1.00	21.94	M	N
ATOM	6075	CA	VAL	M	187	34.577	47.756	38.662	1.00	23.44	M	C
ATOM	6076	CB	VAL	M	187	33.781	48.471	39.761	1.00	22.14	M	C
ATOM	6077	CG1	VAL	M	187	33.874	49.979	39.557	1.00	20.19	M	C
ATOM	6078	CG2	VAL	M	187	32.330	48.020	39.736	1.00	29.20	M	C
ATOM	6079	C	VAL	M	187	35.997	48.287	38.706	1.00	25.65	M	C
ATOM	6080	O	VAL	M	187	36.711	48.069	39.686	1.00	27.97	M	O
ATOM	6081	N	LYS	M	188	36.401	48.989	37.651	1.00	40.99	M	N
ATOM	6082	CA	LYS	M	188	37.752	49.535	37.587	1.00	42.88	M	C
ATOM	6083	CB	LYS	M	188	38.392	49.213	36.227	1.00	48.48	M	C
ATOM	6084	CG	LYS	M	188	39.076	47.848	36.172	1.00	52.46	M	C
ATOM	6085	CD	LYS	M	188	40.245	47.816	37.144	1.00	57.75	M	C
ATOM	6086	CE	LYS	M	188	40.828	46.420	37.329	1.00	62.71	M	C
ATOM	6087	NZ	LYS	M	188	41.475	45.895	36.102	1.00	47.88	M	N
ATOM	6088	C	LYS	M	188	37.818	51.033	37.863	1.00	40.69	M	C
ATOM	6089	O	LYS	M	188	38.870	51.558	38.215	1.00	43.27	M	O
ATOM	6090	N	GLU	M	189	36.694	51.720	37.707	1.00	43.19	M	N
ATOM	6091	CA	GLU	M	189	36.637	53.160	37.951	1.00	45.88	M	C
ATOM	6092	CB	GLU	M	189	36.569	53.938	36.643	1.00	65.80	M	C
ATOM	6093	CG	GLU	M	189	37.671	53.620	35.677	1.00	65.80	M	C
ATOM	6094	CD	GLU	M	189	37.520	54.383	34.386	1.00	65.80	M	C
ATOM	6095	OE1	GLU	M	189	38.321	54.140	33.458	1.00	65.80	M	O
ATOM	6096	OE2	GLU	M	189	36.599	55.227	34.305	1.00	65.80	M	O
ATOM	6097	C	GLU	M	189	35.393	53.466	38.755	1.00	43.40	M	C
ATOM	6098	O	GLU	M	189	34.277	53.260	38.286	1.00	43.96	M	O
ATOM	6099	N	THR	M	190	35.582	53.965	39.967	1.00	35.99	M	N
ATOM	6100	CA	THR	M	190	34.451	54.274	40.812	1.00	37.56	M	C
ATOM	6101	CB	THR	M	190	34.936	54.736	42.195	1.00	29.58	M	C
ATOM	6102	OG1	THR	M	190	34.195	55.884	42.603	1.00	29.58	M	O
ATOM	6103	CG2	THR	M	190	36.405	55.064	42.158	1.00	29.58	M	C
ATOM	6104	C	THR	M	190	33.551	55.319	40.149	1.00	36.04	M	C
ATOM	6105	O	THR	M	190	34.033	56.237	39.494	1.00	36.69	M	O
ATOM	6106	N	GLY	M	191	32.238	55.148	40.303	1.00	24.51	M	N
ATOM	6107	CA	GLY	M	191	31.276	56.064	39.708	1.00	25.96	M	C
ATOM	6108	C	GLY	M	191	29.859	55.513	39.744	1.00	26.16	M	C
ATOM	6109	O	GLY	M	191	29.584	54.583	40.498	1.00	28.87	M	O
ATOM	6110	N	TYR	M	192	28.956	56.077	38.944	1.00	27.08	M	N
ATOM	6111	CA	TYR	M	192	27.570	55.596	38.914	1.00	26.62	M	C
ATOM	6112	CB	TYR	M	192	26.582	56.762	38.776	1.00	34.64	M	C
ATOM	6113	CG	TYR	M	192	26.470	57.608	40.024	1.00	34.64	M	C
ATOM	6114	CD1	TYR	M	192	27.453	58.544	40.349	1.00	34.64	M	C
ATOM	6115	CE1	TYR	M	192	27.390	59.278	41.523	1.00	34.64	M	C
ATOM	6116	CD2	TYR	M	192	25.409	57.429	40.915	1.00	34.64	M	C
ATOM	6117	CE2	TYR	M	192	25.335	58.160	42.103	1.00	34.64	M	C
ATOM	6118	CZ	TYR	M	192	26.336	59.084	42.399	1.00	34.64	M	C
ATOM	6119	OH	TYR	M	192	26.298	59.790	43.581	1.00	34.64	M	O
ATOM	6120	C	TYR	M	192	27.347	54.607	37.775	1.00	24.86	M	C
ATOM	6121	O	TYR	M	192	27.781	54.833	36.647	1.00	25.91	M	O
ATOM	6122	N	PHE	M	193	26.670	53.505	38.070	1.00	23.06	M	N
ATOM	6123	CA	PHE	M	193	26.433	52.503	37.050	1.00	23.06	M	C
ATOM	6124	CB	PHE	M	193	27.339	51.289	37.263	1.00	33.42	M	C
ATOM	6125	CG	PHE	M	193	28.806	51.585	37.161	1.00	33.42	M	C
ATOM	6126	CD1	PHE	M	193	29.479	52.234	38.192	1.00	33.42	M	C
ATOM	6127	CD2	PHE	M	193	29.531	51.173	36.043	1.00	33.42	M	C
ATOM	6128	CE1	PHE	M	193	30.852	52.463	38.112	1.00	33.42	M	C
ATOM	6129	CE2	PHE	M	193	30.903	51.396	35.953	1.00	33.42	M	C
ATOM	6130	CZ	PHE	M	193	31.563	52.042	36.989	1.00	33.42	M	C
ATOM	6131	C	PHE	M	193	25.004	52.004	36.979	1.00	23.06	M	C
ATOM	6132	O	PHE	M	193	24.317	51.832	38.003	1.00	23.06	M	O
ATOM	6133	N	PHE	M	194	24.567	51.775	35.744	1.00	24.56	M	N
ATOM	6134	CA	PHE	M	194	23.251	51.225	35.482	1.00	25.04	M	C
ATOM	6135	CB	PHE	M	194	22.699	51.739	34.152	1.00	22.58	M	C

Figure 8-94

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ATOM 6136  CG  PHE M 194      21.423  51.079  33.735  1.00 22.58      M    C
ATOM 6137  CD1 PHE M 194      20.249  51.297  34.444  1.00 22.58      M    C
ATOM 6138  CD2 PHE M 194      21.402  50.215  32.644  1.00 22.58      M    C
ATOM 6139  CE1 PHE M 194      19.073  50.664  34.079  1.00 22.58      M    C
ATOM 6140  CE2 PHE M 194      20.234  49.575  32.268  1.00 22.58      M    C
ATOM 6141  CZ  PHE M 194      19.064  49.799  32.986  1.00 22.58      M    C
ATOM 6142  C   PHE M 194      23.571  49.737  35.392  1.00 25.43      M    C
ATOM 6143  O   PHE M 194      24.383  49.329  34.559  1.00 27.55      M    O
ATOM 6144  N   ILE M 195      22.960  48.944  36.271  1.00 28.85      M    N
ATOM 6145  CA  ILE M 195      23.195  47.508  36.305  1.00 26.06      M    C
ATOM 6146  CB  ILE M 195      23.692  47.094  37.675  1.00 25.20      M    C
ATOM 6147  CG2 ILE M 195      24.088  45.642  37.663  1.00 25.20      M    C
ATOM 6148  CG1 ILE M 195      24.880  47.957  38.065  1.00 25.20      M    C
ATOM 6149  CD1 ILE M 195      25.356  47.702  39.485  1.00 25.20      M    C
ATOM 6150  C   ILE M 195      21.922  46.738  36.003  1.00 25.03      M    C
ATOM 6151  O   ILE M 195      20.870  47.037  36.553  1.00 23.65      M    O
ATOM 6152  N   TYR M 196      22.019  45.741  35.135  1.00 16.55      M    N
ATOM 6153  CA  TYR M 196      20.849  44.943  34.766  1.00 21.08      M    C
ATOM 6154  CB  TYR M 196      20.266  45.423  33.435  1.00 16.42      M    C
ATOM 6155  CG  TYR M 196      21.259  45.384  32.310  1.00 11.31      M    C
ATOM 6156  CD1 TYR M 196      22.203  46.388  32.163  1.00 14.62      M    C
ATOM 6157  CE1 TYR M 196      23.168  46.335  31.132  1.00 12.98      M    C
ATOM 6158  CD2 TYR M 196      21.284  44.321  31.413  1.00 14.76      M    C
ATOM 6159  CE2 TYR M 196      22.236  44.252  30.379  1.00 17.93      M    C
ATOM 6160  CZ  TYR M 196      23.173  45.261  30.246  1.00 14.04      M    C
ATOM 6161  OH  TYR M 196      24.110  45.202  29.241  1.00 14.27      M    O
ATOM 6162  C   TYR M 196      21.177  43.459  34.646  1.00 22.33      M    C
ATOM 6163  O   TYR M 196      22.287  43.074  34.259  1.00 19.54      M    O
ATOM 6164  N   GLY M 197      20.191  42.632  34.968  1.00 23.86      M    N
ATOM 6165  CA  GLY M 197      20.381  41.202  34.894  1.00 22.68      M    C
ATOM 6166  C   GLY M 197      19.075  40.466  34.679  1.00 23.43      M    C
ATOM 6167  O   GLY M 197      18.055  40.777  35.298  1.00 21.77      M    O
ATOM 6168  N   GLN M 198      19.106  39.483  33.790  1.00 34.48      M    N
ATOM 6169  CA  GLN M 198      17.925  38.690  33.501  1.00 37.17      M    C
ATOM 6170  CB  GLN M 198      17.266  39.161  32.202  1.00 20.36      M    C
ATOM 6171  CG  GLN M 198      16.206  38.205  31.697  1.00 23.46      M    C
ATOM 6172  CD  GLN M 198      15.592  38.654  30.397  1.00 26.72      M    C
ATOM 6173  OE1 GLN M 198      15.025  39.732  30.324  1.00 25.38      M    O
ATOM 6174  NE2 GLN M 198      15.696  37.826  29.359  1.00 23.97      M    N
ATOM 6175  C   GLN M 198      18.277  37.218  33.369  1.00 37.12      M    C
ATOM 6176  O   GLN M 198      19.318  36.866  32.816  1.00 37.95      M    O
ATOM 6177  N   VAL M 199      17.412  36.360  33.891  1.00 15.92      M    N
ATOM 6178  CA  VAL M 199      17.619  34.925  33.779  1.00 19.07      M    C
ATOM 6179  CB  VAL M 199      18.345  34.322  35.033  1.00  8.39      M    C
ATOM 6180  CG1 VAL M 199      18.262  35.267  36.203  1.00  7.15      M    C
ATOM 6181  CG2 VAL M 199      17.751  32.974  35.394  1.00  9.86      M    C
ATOM 6182  C   VAL M 199      16.279  34.232  33.545  1.00 21.20      M    C
ATOM 6183  O   VAL M 199      15.242  34.639  34.096  1.00 19.92      M    O
ATOM 6184  N   LEU M 200      16.303  33.207  32.692  1.00 18.72      M    N
ATOM 6185  CA  LEU M 200      15.102  32.449  32.375  1.00 17.78      M    C
ATOM 6186  CB  LEU M 200      15.142  31.990  30.915  1.00  9.21      M    C
ATOM 6187  CG  LEU M 200      14.132  30.911  30.486  1.00  9.21      M    C
ATOM 6188  CD1 LEU M 200      12.728  31.178  31.058  1.00  9.21      M    C
ATOM 6189  CD2 LEU M 200      14.109  30.847  28.953  1.00  9.21      M    C
ATOM 6190  C   LEU M 200      14.981  31.252  33.301  1.00 18.76      M    C
ATOM 6191  O   LEU M 200      15.751  30.298  33.202  1.00 20.18      M    O
ATOM 6192  N   TYR M 201      14.019  31.316  34.215  1.00 29.20      M    N
ATOM 6193  CA  TYR M 201      13.784  30.234  35.161  1.00 29.46      M    C
ATOM 6194  CB  TYR M 201      13.117  30.783  36.404  1.00 30.05      M    C
ATOM 6195  CG  TYR M 201      14.037  31.725  37.103  1.00 30.05      M    C
ATOM 6196  CD1 TYR M 201      15.206  31.258  37.673  1.00 30.05      M    C
ATOM 6197  CE1 TYR M 201      16.121  32.119  38.244  1.00 30.05      M    C
ATOM 6198  CD2 TYR M 201      13.789  33.087  37.123  1.00 30.05      M    C
ATOM 6199  CE2 TYR M 201      14.697  33.969  37.691  1.00 30.05      M    C
ATOM 6200  CZ  TYR M 201      15.870  33.475  38.249  1.00 30.05      M    C
ATOM 6201  OH  TYR M 201      16.816  34.322  38.785  1.00 30.05      M    O
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Figure 8-95

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ATOM 6202  C   TYR M 201      12.945  29.143  34.535  1.00 28.90      M    C
ATOM 6203  O   TYR M 201      11.877  29.387  33.989  1.00 28.36      M    O
ATOM 6204  N   THR M 202      13.463  27.929  34.610  1.00 24.27      M    N
ATOM 6205  CA  THR M 202      12.811  26.776  34.032  1.00 29.52      M    C
ATOM 6206  CB  THR M 202      13.687  26.225  32.885  1.00 46.33      M    C
ATOM 6207  OG1 THR M 202      12.998  25.167  32.227  1.00 46.33      M    O
ATOM 6208  CG2 THR M 202      15.004  25.705  33.407  1.00 46.33      M    C
ATOM 6209  C   THR M 202      12.592  25.735  35.133  1.00 28.16      M    C
ATOM 6210  O   THR M 202      12.331  24.566  34.879  1.00 27.29      M    O
ATOM 6211  N   ASP M 203      12.699  26.194  36.371  1.00 50.35      M    N
ATOM 6212  CA  ASP M 203      12.518  25.354  37.547  1.00 50.35      M    C
ATOM 6213  CB  ASP M 203      13.448  25.868  38.654  1.00 70.91      M    C
ATOM 6214  CG  ASP M 203      13.334  25.082  39.938  1.00 70.91      M    C
ATOM 6215  OD1 ASP M 203      14.305  25.086  40.721  1.00 70.91      M    O
ATOM 6216  OD2 ASP M 203      12.275  24.472  40.179  1.00 70.91      M    O
ATOM 6217  C   ASP M 203      11.046  25.445  37.962  1.00 50.35      M    C
ATOM 6218  O   ASP M 203      10.398  26.459  37.715  1.00 50.35      M    O
ATOM 6219  N   LYS M 204      10.504  24.396  38.574  1.00 40.47      M    N
ATOM 6220  CA  LYS M 204       9.107  24.446  38.979  1.00 40.47      M    C
ATOM 6221  CB  LYS M 204       8.362  23.206  38.478  1.00 57.14      M    C
ATOM 6222  CG  LYS M 204       8.817  21.909  39.083  1.00 57.14      M    C
ATOM 6223  CD  LYS M 204       8.043  20.740  38.494  1.00 57.14      M    C
ATOM 6224  CE  LYS M 204       8.319  20.583  37.001  1.00 57.14      M    C
ATOM 6225  NZ  LYS M 204       7.570  19.438  36.401  1.00 57.14      M    N
ATOM 6226  C   LYS M 204       8.831  24.656  40.473  1.00 40.47      M    C
ATOM 6227  O   LYS M 204       7.742  24.346  40.951  1.00 40.47      M    O
ATOM 6228  N   THR M 205       9.798  25.197  41.209  1.00 44.30      M    N
ATOM 6229  CA  THR M 205       9.591  25.462  42.638  1.00 44.30      M    C
ATOM 6230  CB  THR M 205      10.920  25.798  43.356  1.00 62.10      M    C
ATOM 6231  OG1 THR M 205      11.379  27.089  42.941  1.00 62.10      M    O
ATOM 6232  CG2 THR M 205      11.979  24.774  43.014  1.00 62.10      M    C
ATOM 6233  C   THR M 205       8.641  26.664  42.746  1.00 44.30      M    C
ATOM 6234  O   THR M 205       8.619  27.503  41.852  1.00 44.30      M    O
ATOM 6235  N   TYR M 206       7.871  26.755  43.830  1.00 40.74      M    N
ATOM 6236  CA  TYR M 206       6.907  27.847  43.998  1.00 40.74      M    C
ATOM 6237  CB  TYR M 206       6.500  28.014  45.473  1.00 69.79      M    C
ATOM 6238  CG  TYR M 206       7.526  28.674  46.364  1.00 69.79      M    C
ATOM 6239  CD1 TYR M 206       7.156  29.676  47.260  1.00 69.79      M    C
ATOM 6240  CE1 TYR M 206       8.088  30.273  48.100  1.00 69.79      M    C
ATOM 6241  CD2 TYR M 206       8.857  28.282  46.332  1.00 69.79      M    C
ATOM 6242  CE2 TYR M 206       9.799  28.868  47.166  1.00 69.79      M    C
ATOM 6243  CZ  TYR M 206       9.410  29.865  48.050  1.00 69.79      M    C
ATOM 6244  OH  TYR M 206      10.349  30.456  48.875  1.00 69.79      M    O
ATOM 6245  C   TYR M 206       7.370  29.197  43.450  1.00 40.74      M    C
ATOM 6246  O   TYR M 206       6.594  29.911  42.812  1.00 40.74      M    O
ATOM 6247  N   ALA M 207       8.629  29.549  43.686  1.00 22.09      M    N
ATOM 6248  CA  ALA M 207       9.137  30.821  43.202  1.00 22.09      M    C
ATOM 6249  CB  ALA M 207       8.773  31.907  44.176  1.00 23.96      M    C
ATOM 6250  C   ALA M 207      10.642  30.800  42.978  1.00 22.09      M    C
ATOM 6251  O   ALA M 207      11.381  30.182  43.735  1.00 22.09      M    O
ATOM 6252  N   MET M 208      11.080  31.480  41.924  1.00 38.97      M    N
ATOM 6253  CA  MET M 208      12.495  31.562  41.577  1.00 38.97      M    C
ATOM 6254  CB  MET M 208      12.767  30.817  40.268  1.00 37.35      M    C
ATOM 6255  CG  MET M 208      12.611  29.312  40.375  1.00 37.35      M    C
ATOM 6256  SD  MET M 208      13.795  28.612  41.537  1.00 37.35      M    S
ATOM 6257  CE  MET M 208      15.248  28.481  40.456  1.00 37.35      M    C
ATOM 6258  C   MET M 208      12.894  33.023  41.423  1.00 38.97      M    C
ATOM 6259  O   MET M 208      12.035  33.906  41.378  1.00 38.97      M    O
ATOM 6260  N   GLY M 209      14.194  33.278  41.343  1.00 35.03      M    N
ATOM 6261  CA  GLY M 209      14.653  34.646  41.193  1.00 35.03      M    C
ATOM 6262  C   GLY M 209      16.140  34.767  41.421  1.00 35.03      M    C
ATOM 6263  O   GLY M 209      16.784  33.802  41.822  1.00 35.03      M    O
ATOM 6264  N   HIS M 210      16.698  35.944  41.162  1.00 22.09      M    N
ATOM 6265  CA  HIS M 210      18.125  36.141  41.358  1.00 22.09      M    C
ATOM 6266  CB  HIS M 210      18.889  36.125  40.022  1.00 25.72      M    C
ATOM 6267  CG  HIS M 210      18.357  37.078  38.997  1.00 25.72      M    C
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Figure 8-96

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ATOM 6268  CD2 HIS M 210      18.926  38.149  38.397  1.00 25.72      M    C
ATOM 6269  ND1 HIS M 210      17.104  36.944  38.431  1.00 25.72      M    N
ATOM 6270  CE1 HIS M 210      16.929  37.889  37.524  1.00 25.72      M    C
ATOM 6271  NE2 HIS M 210      18.019  38.634  37.484  1.00 25.72      M    N
ATOM 6272  C   HIS M 210      18.439  37.417  42.083  1.00 22.09      M    C
ATOM 6273  O   HIS M 210      17.594  38.296  42.233  1.00 22.09      M    O
ATOM 6274  N   LEU M 211      19.681  37.504  42.532  1.00 18.47      M    N
ATOM 6275  CA  LEU M 211      20.165  38.665  43.248  1.00 20.44      M    C
ATOM 6276  CB  LEU M 211      20.681  38.256  44.617  1.00 29.55      M    C
ATOM 6277  CG  LEU M 211      19.854  37.233  45.367  1.00 28.81      M    C
ATOM 6278  CD1 LEU M 211      20.682  36.702  46.507  1.00 28.81      M    C
ATOM 6279  CD2 LEU M 211      18.567  37.866  45.859  1.00 28.81      M    C
ATOM 6280  C   LEU M 211      21.331  39.245  42.476  1.00 21.52      M    C
ATOM 6281  O   LEU M 211      22.240  38.518  42.081  1.00 24.51      M    O
ATOM 6282  N   ILE M 212      21.297  40.543  42.230  1.00 25.83      M    N
ATOM 6283  CA  ILE M 212      22.413  41.182  41.569  1.00 23.54      M    C
ATOM 6284  CB  ILE M 212      21.960  42.287  40.622  1.00 23.21      M    C
ATOM 6285  CG2 ILE M 212      23.139  43.142  40.215  1.00 30.02      M    C
ATOM 6286  CG1 ILE M 212      21.299  41.657  39.391  1.00 30.02      M    C
ATOM 6287  CD1 ILE M 212      20.723  42.665  38.410  1.00 30.02      M    C
ATOM 6288  C   ILE M 212      23.097  41.756  42.787  1.00 21.49      M    C
ATOM 6289  O   ILE M 212      22.611  42.710  43.387  1.00 22.49      M    O
ATOM 6290  N   GLN M 213      24.204  41.139  43.178  1.00 28.15      M    N
ATOM 6291  CA  GLN M 213      24.927  41.558  44.371  1.00 29.33      M    C
ATOM 6292  CB  GLN M 213      25.229  40.341  45.241  1.00 51.08      M    C
ATOM 6293  CG  GLN M 213      24.050  39.435  45.458  1.00 57.51      M    C
ATOM 6294  CD  GLN M 213      24.415  38.235  46.291  1.00 57.51      M    C
ATOM 6295  OE1 GLN M 213      25.365  37.515  45.984  1.00 57.51      M    O
ATOM 6296  NE2 GLN M 213      23.662  38.007  47.351  1.00 57.51      M    N
ATOM 6297  C   GLN M 213      26.227  42.312  44.133  1.00 27.30      M    C
ATOM 6298  O   GLN M 213      26.887  42.179  43.099  1.00 26.02      M    O
ATOM 6299  N   ARG M 214      26.595  43.088  45.139  1.00 31.92      M    N
ATOM 6300  CA  ARG M 214      27.805  43.887  45.123  1.00 32.49      M    C
ATOM 6301  CB  ARG M 214      27.450  45.325  45.447  1.00 34.28      M    C
ATOM 6302  CG  ARG M 214      28.642  46.212  45.618  1.00 26.26      M    C
ATOM 6303  CD  ARG M 214      28.223  47.529  46.212  1.00 26.26      M    C
ATOM 6304  NE  ARG M 214      29.334  48.470  46.257  1.00 26.26      M    N
ATOM 6305  CZ  ARG M 214      29.373  49.523  47.065  1.00 26.26      M    C
ATOM 6306  NH1 ARG M 214      28.352  49.746  47.886  1.00 26.26      M    N
ATOM 6307  NH2 ARG M 214      30.425  50.340  47.058  1.00 26.26      M    N
ATOM 6308  C   ARG M 214      28.796  43.373  46.166  1.00 31.14      M    C
ATOM 6309  O   ARG M 214      28.471  43.301  47.355  1.00 32.16      M    O
ATOM 6310  N   LYS M 215      29.994  43.012  45.720  1.00 30.43      M    N
ATOM 6311  CA  LYS M 215      31.051  42.522  46.612  1.00 35.08      M    C
ATOM 6312  CB  LYS M 215      31.839  41.413  45.920  1.00142.37      M    C
ATOM 6313  CG  LYS M 215      32.530  40.439  46.849  1.00 84.57      M    C
ATOM 6314  CD  LYS M 215      33.383  39.467  46.034  1.00 84.57      M    C
ATOM 6315  CE  LYS M 215      33.843  38.264  46.847  1.00 84.57      M    C
ATOM 6316  NZ  LYS M 215      32.713  37.345  47.161  1.00 84.57      M    N
ATOM 6317  C   LYS M 215      31.949  43.738  46.849  1.00 33.32      M    C
ATOM 6318  O   LYS M 215      32.744  44.107  45.983  1.00 32.42      M    O
ATOM 6319  N   LYS M 216      31.808  44.367  48.013  1.00 46.88      M    N
ATOM 6320  CA  LYS M 216      32.572  45.572  48.355  1.00 46.88      M    C
ATOM 6321  CB  LYS M 216      31.890  46.313  49.505  1.00 76.91      M    C
ATOM 6322  CG  LYS M 216      30.497  46.793  49.187  1.00 60.58      M    C
ATOM 6323  CD  LYS M 216      29.899  47.611  50.323  1.00 60.58      M    C
ATOM 6324  CE  LYS M 216      29.571  46.752  51.526  1.00 60.58      M    C
ATOM 6325  NZ  LYS M 216      28.872  47.527  52.593  1.00 60.58      M    N
ATOM 6326  C   LYS M 216      34.029  45.347  48.734  1.00 46.88      M    C
ATOM 6327  O   LYS M 216      34.359  44.369  49.401  1.00 46.88      M    O
ATOM 6328  N   VAL M 217      34.900  46.262  48.318  1.00 66.03      M    N
ATOM 6329  CA  VAL M 217      36.319  46.157  48.654  1.00 66.03      M    C
ATOM 6330  CB  VAL M 217      37.224  46.901  47.648  1.00 48.81      M    C
ATOM 6331  CG1 VAL M 217      37.304  46.130  46.376  1.00 48.81      M    C
ATOM 6332  CG2 VAL M 217      36.692  48.302  47.387  1.00 48.81      M    C
ATOM 6333  C   VAL M 217      36.554  46.767  50.023  1.00 66.03      M    C
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Figure 8-97

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ATOM 6334  O   VAL M 217      37.477  46.384  50.738  1.00 66.03      M    O
ATOM 6335  N   HIS M 218      35.712  47.727  50.379  1.00 77.18      M    N
ATOM 6336  CA  HIS M 218      35.826  48.389  51.664  1.00 77.18      M    C
ATOM 6337  CB  HIS M 218      35.840  49.904  51.501  1.00109.92      M    C
ATOM 6338  CG  HIS M 218      36.951  50.407  50.642  1.00109.92      M    C
ATOM 6339  CD2 HIS M 218      37.032  51.490  49.835  1.00109.92      M    C
ATOM 6340  ND1 HIS M 218      38.182  49.791  50.586  1.00109.92      M    N
ATOM 6341  CE1 HIS M 218      38.975  50.473  49.780  1.00109.92      M    C
ATOM 6342  NE2 HIS M 218      38.301  51.509  49.311  1.00109.92      M    N
ATOM 6343  C   HIS M 218      34.697  48.047  52.598  1.00 77.18      M    C
ATOM 6344  O   HIS M 218      33.523  48.059  52.222  1.00 77.18      M    O
ATOM 6345  N   VAL M 219      35.077  47.783  53.838  1.00 54.07      M    N
ATOM 6346  CA  VAL M 219      34.126  47.487  54.888  1.00 54.07      M    C
ATOM 6347  CB  VAL M 219      33.996  45.964  55.139  1.00 36.76      M    C
ATOM 6348  CG1 VAL M 219      33.124  45.321  54.050  1.00 36.76      M    C
ATOM 6349  CG2 VAL M 219      35.382  45.325  55.148  1.00 36.76      M    C
ATOM 6350  C   VAL M 219      34.662  48.188  56.126  1.00 54.07      M    C
ATOM 6351  O   VAL M 219      35.640  47.754  56.721  1.00 54.07      M    O
ATOM 6352  N   PHE M 220      34.047  49.311  56.473  1.00 79.71      M    N
ATOM 6353  CA  PHE M 220      34.452  50.081  57.640  1.00 79.71      M    C
ATOM 6354  CB  PHE M 220      34.809  51.527  57.248  1.00108.04      M    C
ATOM 6355  CG  PHE M 220      35.750  51.659  56.057  1.00108.04      M    C
ATOM 6356  CD1 PHE M 220      35.939  52.905  55.457  1.00108.04      M    C
ATOM 6357  CD2 PHE M 220      36.460  50.569  55.552  1.00108.04      M    C
ATOM 6358  CE1 PHE M 220      36.815  53.069  54.380  1.00108.04      M    C
ATOM 6359  CE2 PHE M 220      37.342  50.723  54.470  1.00108.04      M    C
ATOM 6360  CZ  PHE M 220      37.517  51.977  53.887  1.00108.04      M    C
ATOM 6361  C   PHE M 220      33.225  50.094  58.552  1.00 79.71      M    C
ATOM 6362  O   PHE M 220      32.146  50.507  58.133  1.00 79.71      M    O
ATOM 6363  N   GLY M 221      33.371  49.635  59.788  1.00 63.47      M    N
ATOM 6364  CA  GLY M 221      32.225  49.624  60.681  1.00 63.47      M    C
ATOM 6365  C   GLY M 221      31.422  48.332  60.651  1.00 63.47      M    C
ATOM 6366  O   GLY M 221      31.947  47.253  60.935  1.00 63.47      M    O
ATOM 6367  N   ASP M 222      30.145  48.424  60.305  1.00106.53      M    N
ATOM 6368  CA  ASP M 222      29.311  47.232  60.271  1.00106.53      M    C
ATOM 6369  CB  ASP M 222      27.896  47.567  60.749  1.00117.48      M    C
ATOM 6370  CG  ASP M 222      27.879  48.658  61.801  1.00117.48      M    C
ATOM 6371  OD1 ASP M 222      28.298  49.788  61.477  1.00117.48      M    O
ATOM 6372  OD2 ASP M 222      27.448  48.389  62.943  1.00117.48      M    O
ATOM 6373  C   ASP M 222      29.249  46.634  58.868  1.00106.53      M    C
ATOM 6374  O   ASP M 222      29.107  45.422  58.711  1.00106.53      M    O
ATOM 6375  N   GLU M 223      29.367  47.493  57.858  1.00 81.23      M    N
ATOM 6376  CA  GLU M 223      29.301  47.090  56.453  1.00 81.23      M    C
ATOM 6377  CB  GLU M 223      30.294  47.908  55.624  1.00108.42      M    C
ATOM 6378  CG  GLU M 223      29.815  49.297  55.253  1.00108.42      M    C
ATOM 6379  CD  GLU M 223      30.544  49.848  54.040  1.00108.42      M    C
ATOM 6380  OE1 GLU M 223      31.777  50.025  54.115  1.00108.42      M    O
ATOM 6381  OE2 GLU M 223      29.887  50.098  53.006  1.00108.42      M    O
ATOM 6382  C   GLU M 223      29.500  45.610  56.120  1.00 81.23      M    C
ATOM 6383  O   GLU M 223      30.578  45.056  56.338  1.00 81.23      M    O
ATOM 6384  N   LEU M 224      28.455  44.977  55.590  1.00 45.92      M    N
ATOM 6385  CA  LEU M 224      28.539  43.572  55.186  1.00 45.92      M    C
ATOM 6386  CB  LEU M 224      27.144  43.004  54.886  1.00 50.52      M    C
ATOM 6387  CG  LEU M 224      26.094  42.887  55.996  1.00 50.52      M    C
ATOM 6388  CD1 LEU M 224      26.500  41.825  56.990  1.00 50.52      M    C
ATOM 6389  CD2 LEU M 224      25.923  44.222  56.681  1.00 50.52      M    C
ATOM 6390  C   LEU M 224      29.352  43.649  53.901  1.00 45.92      M    C
ATOM 6391  O   LEU M 224      29.195  44.607  53.156  1.00 45.92      M    O
ATOM 6392  N   SER M 225      30.202  42.667  53.611  1.00 34.22      M    N
ATOM 6393  CA  SER M 225      30.988  42.805  52.394  1.00 34.22      M    C
ATOM 6394  CB  SER M 225      32.213  41.885  52.417  1.00 96.80      M    C
ATOM 6395  OG  SER M 225      31.843  40.526  52.529  1.00 96.80      M    O
ATOM 6396  C   SER M 225      30.161  42.567  51.138  1.00 34.22      M    C
ATOM 6397  O   SER M 225      30.391  43.208  50.121  1.00 34.22      M    O
ATOM 6398  N   LEU M 226      29.188  41.667  51.214  1.00 30.14      M    N
ATOM 6399  CA  LEU M 226      28.348  41.368  50.061  1.00 28.91      M    C
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Figure 8-98

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ATOM 6400  CB  LEU M 226      28.298  39.859  49.799  1.00 35.04      M    C
ATOM 6401  CG  LEU M 226      27.567  39.419  48.528  1.00 35.04      M    C
ATOM 6402  CD1 LEU M 226      28.378  39.841  47.307  1.00 35.04      M    C
ATOM 6403  CD2 LEU M 226      27.367  37.917  48.539  1.00 35.04      M    C
ATOM 6404  C   LEU M 226      26.938  41.853  50.317  1.00 24.38      M    C
ATOM 6405  O   LEU M 226      26.290  41.399  51.253  1.00 25.15      M    O
ATOM 6406  N   VAL M 227      26.455  42.769  49.487  1.00 58.84      M    N
ATOM 6407  CA  VAL M 227      25.097  43.272  49.645  1.00 53.84      M    C
ATOM 6408  CB  VAL M 227      25.097  44.741  50.060  1.00 58.65      M    C
ATOM 6409  CG1 VAL M 227      25.833  44.895  51.371  1.00 58.65      M    C
ATOM 6410  CG2 VAL M 227      25.762  45.580  48.990  1.00 58.65      M    C
ATOM 6411  C   VAL M 227      24.367  43.135  48.326  1.00 49.67      M    C
ATOM 6412  O   VAL M 227      24.966  43.304  47.262  1.00 40.58      M    O
ATOM 6413  N   THR M 228      23.080  42.819  48.370  1.00 32.61      M    N
ATOM 6414  CA  THR M 228      22.370  42.687  47.110  1.00 34.32      M    C
ATOM 6415  CB  THR M 228      21.283  41.563  47.162  1.00 31.81      M    C
ATOM 6416  OG1 THR M 228      19.991  42.152  47.316  1.00 31.81      M    O
ATOM 6417  CG2 THR M 228      21.546  40.597  48.306  1.00 31.81      M    C
ATOM 6418  C   THR M 228      21.752  44.036  46.730  1.00 32.61      M    C
ATOM 6419  O   THR M 228      21.056  44.655  47.522  1.00 34.63      M    O
ATOM 6420  N   LEU M 229      22.052  44.496  45.519  1.00 27.78      M    N
ATOM 6421  CA  LEU M 229      21.537  45.758  45.003  1.00 24.47      M    C
ATOM 6422  CB  LEU M 229      22.389  46.217  43.826  1.00 13.79      M    C
ATOM 6423  CG  LEU M 229      23.680  46.991  44.121  1.00 13.79      M    C
ATOM 6424  CD1 LEU M 229      24.086  46.830  45.559  1.00 13.79      M    C
ATOM 6425  CD2 LEU M 229      24.789  46.509  43.183  1.00 13.79      M    C
ATOM 6426  C   LEU M 229      20.084  45.632  44.567  1.00 24.36      M    C
ATOM 6427  O   LEU M 229      19.229  46.374  45.035  1.00 24.71      M    O
ATOM 6428  N   PHE M 230      19.809  44.696  43.667  1.00 36.42      M    N
ATOM 6429  CA  PHE M 230      18.451  44.488  43.193  1.00 36.16      M    C
ATOM 6430  CB  PHE M 230      18.263  45.096  41.809  1.00 67.37      M    C
ATOM 6431  CG  PHE M 230      19.070  46.315  41.590  1.00 67.37      M    C
ATOM 6432  CD1 PHE M 230      20.247  46.250  40.857  1.00 67.37      M    C
ATOM 6433  CD2 PHE M 230      18.697  47.522  42.182  1.00 67.37      M    C
ATOM 6434  CE1 PHE M 230      21.054  47.373  40.717  1.00 67.37      M    C
ATOM 6435  CE2 PHE M 230      19.489  48.655  42.054  1.00 67.37      M    C
ATOM 6436  CZ  PHE M 230      20.676  48.584  41.321  1.00 67.37      M    C
ATOM 6437  C   PHE M 230      18.192  43.008  43.100  1.00 38.05      M    C
ATOM 6438  O   PHE M 230      19.129  42.216  42.994  1.00 36.81      M    O
ATOM 6439  N   ARG M 231      16.921  42.630  43.157  1.00 21.47      M    N
ATOM 6440  CA  ARG M 231      16.568  41.232  43.022  1.00 23.31      M    C
ATOM 6441  CB  ARG M 231      16.435  40.550  44.385  1.00 28.53      M    C
ATOM 6442  CG  ARG M 231      15.336  41.046  45.279  1.00 28.53      M    C
ATOM 6443  CD  ARG M 231      15.591  40.532  46.696  1.00 32.57      M    C
ATOM 6444  NE  ARG M 231      14.452  40.722  47.593  1.00 39.91      M    N
ATOM 6445  CZ  ARG M 231      13.354  39.978  47.556  1.00 50.41      M    C
ATOM 6446  NH1 ARG M 231      13.257  38.992  46.670  1.00 46.64      M    N
ATOM 6447  NH2 ARG M 231      12.351  40.235  48.385  1.00 51.18      M    N
ATOM 6448  C   ARG M 231      15.301  41.076  42.199  1.00 25.45      M    C
ATOM 6449  O   ARG M 231      14.496  42.002  42.061  1.00 28.44      M    O
ATOM 6450  N   CYS M 232      15.160  39.884  41.636  1.00 39.93      M    N
ATOM 6451  CA  CYS M 232      14.054  39.538  40.771  1.00 39.87      M    C
ATOM 6452  C   CYS M 232      13.400  38.309  41.355  1.00 43.33      M    C
ATOM 6453  O   CYS M 232      14.088  37.420  41.846  1.00 44.76      M    O
ATOM 6454  CB  CYS M 232      14.607  39.204  39.392  1.00 33.34      M    C
ATOM 6455  SG  CYS M 232      13.567  39.727  38.013  1.00 33.34      M    S
ATOM 6456  N   ILE M 233      12.076  38.248  41.305  1.00  8.56      M    N
ATOM 6457  CA  ILE M 233      11.370  37.083  41.834  1.00 10.26      M    C
ATOM 6458  CB  ILE M 233      10.900  37.306  43.303  1.00 24.40      M    C
ATOM 6459  CG2 ILE M 233       9.890  38.445  43.375  1.00 24.40      M    C
ATOM 6460  CG1 ILE M 233      10.241  36.041  43.838  1.00 24.40      M    C
ATOM 6461  CD1 ILE M 233      11.145  34.869  43.873  1.00 24.40      M    C
ATOM 6462  C   ILE M 233      10.172  36.777  40.946  1.00 14.74      M    C
ATOM 6463  O   ILE M 233       9.428  37.675  40.543  1.00 15.20      M    O
ATOM 6464  N   GLN M 234       9.988  35.498  40.645  1.00 20.99      M    N
ATOM 6465  CA  GLN M 234       8.895  35.081  39.785  1.00 24.88      M    C
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Figure 8-99

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ATOM 6466  CB  GLN M 234      9.442  34.902  38.366  1.00 38.84      M    C
ATOM 6467  CG  GLN M 234      8.410  34.937  37.270  1.00 38.84      M    C
ATOM 6468  CD  GLN M 234      7.832  36.324  37.036  1.00 38.84      M    C
ATOM 6469  OE1 GLN M 234      6.788  36.472  36.396  1.00 38.84      M    O
ATOM 6470  NE2 GLN M 234      8.509  37.344  37.546  1.00 38.84      M    N
ATOM 6471  C   GLN M 234      8.270  33.775  40.303  1.00 25.83      M    C
ATOM 6472  O   GLN M 234      8.983  32.852  40.683  1.00 25.81      M    O
ATOM 6473  N   ASN M 235      6.941  33.709  40.356  1.00 29.36      M    N
ATOM 6474  CA  ASN M 235      6.269  32.489  40.802  1.00 32.80      M    C
ATOM 6475  CB  ASN M 235      4.791  32.739  41.134  1.00 18.11      M    C
ATOM 6476  CG  ASN M 235      4.586  33.362  42.503  1.00 18.11      M    C
ATOM 6477  OD1 ASN M 235      5.009  32.809  43.514  1.00 18.11      M    O
ATOM 6478  ND2 ASN M 235      3.925  34.514  42.544  1.00 18.11      M    N
ATOM 6479  C   ASN M 235      6.359  31.538  39.621  1.00 30.70      M    C
ATOM 6480  O   ASN M 235      6.274  31.966  38.467  1.00 28.01      M    O
ATOM 6481  N   MET M 236      6.540  30.254  39.903  1.00 44.66      M    N
ATOM 6482  CA  MET M 236      6.654  29.253  38.850  1.00 44.66      M    C
ATOM 6483  CB  MET M 236      7.951  28.468  39.021  1.00 30.16      M    C
ATOM 6484  CG  MET M 236      9.210  29.316  38.972  1.00 30.16      M    C
ATOM 6485  SD  MET M 236      9.456  30.065  37.352  1.00 30.16      M    S
ATOM 6486  CE  MET M 236      8.939  31.657  37.709  1.00 30.16      M    C
ATOM 6487  C   MET M 236      5.486  28.286  38.894  1.00 44.66      M    C
ATOM 6488  O   MET M 236      5.002  27.938  39.963  1.00 44.66      M    O
ATOM 6489  N   PRO M 237      5.018  27.832  37.728  1.00 28.11      M    N
ATOM 6490  CD  PRO M 237      5.410  28.279  36.382  1.00 19.70      M    C
ATOM 6491  CA  PRO M 237      3.898  26.890  37.644  1.00 28.11      M    C
ATOM 6492  CB  PRO M 237      3.396  27.096  36.228  1.00 19.70      M    C
ATOM 6493  CG  PRO M 237      4.654  27.298  35.481  1.00 19.70      M    C
ATOM 6494  C   PRO M 237      4.341  25.446  37.891  1.00 28.11      M    C
ATOM 6495  O   PRO M 237      5.536  25.160  37.982  1.00 28.11      M    O
ATOM 6496  N   GLU M 238      3.369  24.543  37.994  1.00 52.45      M    N
ATOM 6497  CA  GLU M 238      3.644  23.126  38.225  1.00 52.45      M    C
ATOM 6498  CB  GLU M 238      2.356  22.408  38.633  1.00119.68      M    C
ATOM 6499  CG  GLU M 238      1.839  22.805  39.998  1.00119.68      M    C
ATOM 6500  CD  GLU M 238      2.753  22.347  41.115  1.00119.68      M    C
ATOM 6501  OE1 GLU M 238      3.966  22.647  41.057  1.00119.68      M    O
ATOM 6502  OE2 GLU M 238      2.256  21.687  42.053  1.00119.68      M    O
ATOM 6503  C   GLU M 238      4.238  22.443  36.991  1.00 52.45      M    C
ATOM 6504  O   GLU M 238      5.185  21.658  37.090  1.00 52.45      M    O
ATOM 6505  N   THR M 239      3.678  22.753  35.827  1.00 33.38      M    N
ATOM 6506  CA  THR M 239      4.137  22.159  34.582  1.00 33.38      M    C
ATOM 6507  CB  THR M 239      2.992  21.392  33.885  1.00 44.46      M    C
ATOM 6508  OG1 THR M 239      1.945  22.304  33.536  1.00 44.46      M    O
ATOM 6509  CG2 THR M 239      2.433  20.323  34.812  1.00 44.46      M    C
ATOM 6510  C   THR M 239      4.697  23.195  33.613  1.00 33.38      M    C
ATOM 6511  O   THR M 239      4.299  24.358  33.634  1.00 33.38      M    O
ATOM 6512  N   LEU M 240      5.624  22.753  32.769  1.00 41.04      M    N
ATOM 6513  CA  LEU M 240      6.267  23.611  31.786  1.00 41.04      M    C
ATOM 6514  CB  LEU M 240      5.327  23.870  30.605  1.00 44.28      M    C
ATOM 6515  CG  LEU M 240      4.963  22.704  29.682  1.00 44.28      M    C
ATOM 6516  CD1 LEU M 240      6.214  22.089  29.087  1.00 44.28      M    C
ATOM 6517  CD2 LEU M 240      4.201  21.672  30.473  1.00 44.28      M    C
ATOM 6518  C   LEU M 240      6.728  24.948  32.357  1.00 41.04      M    C
ATOM 6519  O   LEU M 240      6.476  25.999  31.760  1.00 41.04      M    O
ATOM 6520  N   PRO M 241      7.408  24.938  33.516  1.00 45.84      M    N
ATOM 6521  CD  PRO M 241      8.041  23.827  34.235  1.00 32.61      M    C
ATOM 6522  CA  PRO M 241      7.852  26.221  34.062  1.00 41.83      M    C
ATOM 6523  CB  PRO M 241      8.651  25.812  35.296  1.00 32.61      M    C
ATOM 6524  CG  PRO M 241      9.215  24.506  34.888  1.00 32.61      M    C
ATOM 6525  C   PRO M 241      8.697  26.941  33.010  1.00 39.42      M    C
ATOM 6526  O   PRO M 241      9.639  26.375  32.459  1.00 40.46      M    O
ATOM 6527  N   ASN M 242      8.349  28.190  32.725  1.00 23.76      M    N
ATOM 6528  CA  ASN M 242      9.064  28.944  31.721  1.00 20.53      M    C
ATOM 6529  CB  ASN M 242      8.533  28.532  30.352  1.00 37.50      M    C
ATOM 6530  CG  ASN M 242      9.622  28.394  29.328  1.00 37.50      M    C
ATOM 6531  OD1 ASN M 242      9.417  27.833  28.250  1.00 37.50      M    O
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Figure 8-100

ATOM	6532	ND2	ASN	M	242	10.794	28.912	29.651	1.00	37.50	M	N
ATOM	6533	C	ASN	M	242	8.909	30.451	31.923	1.00	18.09	M	C
ATOM	6534	O	ASN	M	242	8.180	31.097	31.177	1.00	18.22	M	O
ATOM	6535	N	ASN	M	243	9.601	31.009	32.917	1.00	33.76	M	N
ATOM	6536	CA	ASN	M	243	9.524	32.446	33.203	1.00	31.07	M	C
ATOM	6537	CB	ASN	M	243	8.862	32.679	34.559	1.00	30.62	M	C
ATOM	6538	CG	ASN	M	243	7.358	32.606	34.499	1.00	30.62	M	C
ATOM	6539	OD1	ASN	M	243	6.719	32.103	35.422	1.00	30.62	M	O
ATOM	6540	ND2	ASN	M	243	6.776	33.125	33.427	1.00	30.62	M	N
ATOM	6541	C	ASN	M	243	10.872	33.164	33.219	1.00	28.20	M	C
ATOM	6542	O	ASN	M	243	11.791	32.733	33.912	1.00	28.12	M	O
ATOM	6543	N	SER	M	244	10.991	34.258	32.461	1.00	4.13	M	N
ATOM	6544	CA	SER	M	244	12.226	35.044	32.462	1.00	4.13	M	C
ATOM	6545	CB	SER	M	244	12.528	35.606	31.066	1.00	9.36	M	C
ATOM	6546	OG	SER	M	244	11.549	36.536	30.622	1.00	9.36	M	O
ATOM	6547	C	SER	M	244	11.988	36.178	33.461	1.00	7.87	M	C
ATOM	6548	O	SER	M	244	10.850	36.587	33.675	1.00	13.19	M	O
ATOM	6549	N	CYS	M	245	13.052	36.676	34.080	1.00	28.21	M	N
ATOM	6550	CA	CYS	M	245	12.916	37.749	35.065	1.00	26.46	M	C
ATOM	6551	C	CYS	M	245	13.997	38.793	34.839	1.00	27.02	M	C
ATOM	6552	O	CYS	M	245	15.173	38.458	34.785	1.00	24.98	M	O
ATOM	6553	CB	CYS	M	245	13.053	37.168	36.472	1.00	39.20	M	C
ATOM	6554	SG	CYS	M	245	12.278	38.181	37.757	1.00	39.20	M	S
ATOM	6555	N	TYR	M	246	13.611	40.054	34.713	1.00	26.42	M	N
ATOM	6556	CA	TYR	M	246	14.585	41.128	34.478	1.00	23.14	M	C
ATOM	6557	CB	TYR	M	246	14.389	41.733	33.071	1.00	25.90	M	C
ATOM	6558	CG	TYR	M	246	15.165	43.013	32.797	1.00	25.90	M	C
ATOM	6559	CD1	TYR	M	246	16.212	43.039	31.867	1.00	25.90	M	C
ATOM	6560	CE1	TYR	M	246	16.905	44.242	31.581	1.00	25.90	M	C
ATOM	6561	CD2	TYR	M	246	14.833	44.212	33.444	1.00	25.90	M	C
ATOM	6562	CE2	TYR	M	246	15.514	45.403	33.172	1.00	25.90	M	C
ATOM	6563	CZ	TYR	M	246	16.540	45.416	32.239	1.00	25.90	M	C
ATOM	6564	OH	TYR	M	246	17.153	46.613	31.926	1.00	25.90	M	O
ATOM	6565	C	TYR	M	246	14.471	42.229	35.525	1.00	21.87	M	C
ATOM	6566	O	TYR	M	246	13.377	42.614	35.925	1.00	21.05	M	O
ATOM	6567	N	SER	M	247	15.607	42.735	35.973	1.00	28.80	M	N
ATOM	6568	CA	SER	M	247	15.600	43.814	36.937	1.00	27.50	M	C
ATOM	6569	CB	SER	M	247	15.546	43.278	38.360	1.00	20.61	M	C
ATOM	6570	OG	SER	M	247	15.321	44.349	39.261	1.00	20.61	M	O
ATOM	6571	C	SER	M	247	16.855	44.636	36.734	1.00	26.72	M	C
ATOM	6572	O	SER	M	247	17.896	44.109	36.349	1.00	24.15	M	O
ATOM	6573	N	ALA	M	248	16.745	45.935	36.973	1.00	22.01	M	N
ATOM	6574	CA	ALA	M	248	17.879	46.830	36.798	1.00	22.34	M	C
ATOM	6575	CB	ALA	M	248	17.933	47.336	35.354	1.00	5.20	M	C
ATOM	6576	C	ALA	M	248	17.783	47.999	37.749	1.00	21.05	M	C
ATOM	6577	O	ALA	M	248	16.718	48.311	38.265	1.00	17.72	M	O
ATOM	6578	N	GLY	M	249	18.906	48.649	37.979	1.00	28.46	M	N
ATOM	6579	CA	GLY	M	249	18.906	49.786	38.870	1.00	20.68	M	C
ATOM	6580	C	GLY	M	249	20.209	50.544	38.752	1.00	24.91	M	C
ATOM	6581	O	GLY	M	249	21.122	50.117	38.035	1.00	22.73	M	O
ATOM	6582	N	ILE	M	250	20.301	51.676	39.438	1.00	21.86	M	N
ATOM	6583	CA	ILE	M	250	21.519	52.462	39.401	1.00	21.86	M	C
ATOM	6584	CB	ILE	M	250	21.218	53.932	39.087	1.00	17.99	M	C
ATOM	6585	CG2	ILE	M	250	22.501	54.742	39.103	1.00	17.99	M	C
ATOM	6586	CG1	ILE	M	250	20.534	54.027	37.724	1.00	17.99	M	C
ATOM	6587	CD1	ILE	M	250	20.251	55.461	37.269	1.00	17.99	M	C
ATOM	6588	C	ILE	M	250	22.161	52.356	40.764	1.00	21.86	M	C
ATOM	6589	O	ILE	M	250	21.469	52.323	41.782	1.00	21.93	M	O
ATOM	6590	N	ALA	M	251	23.484	52.291	40.786	1.00	34.77	M	N
ATOM	6591	CA	ALA	M	251	24.200	52.189	42.051	1.00	36.07	M	C
ATOM	6592	CB	ALA	M	251	24.279	50.743	42.484	1.00	30.10	M	C
ATOM	6593	C	ALA	M	251	25.592	52.763	41.915	1.00	39.28	M	C
ATOM	6594	O	ALA	M	251	26.209	52.654	40.856	1.00	38.81	M	O
ATOM	6595	N	LYS	M	252	26.082	53.388	42.981	1.00	35.71	M	N
ATOM	6596	CA	LYS	M	252	27.415	53.952	42.935	1.00	35.86	M	C
ATOM	6597	CB	LYS	M	252	27.511	55.208	43.803	1.00	59.16	M	C

Figure 8-101

ATOM	6598	CG	LYS	M	252	28.885	55.880	43.729	1.00	59.64	M	C
ATOM	6599	CD	LYS	M	252	28.822	57.313	44.225	1.00	59.64	M	C
ATOM	6600	CE	LYS	M	252	30.188	57.967	44.230	1.00	59.64	M	C
ATOM	6601	NZ	LYS	M	252	31.089	57.309	45.201	1.00	59.64	M	N
ATOM	6602	C	LYS	M	252	28.376	52.880	43.420	1.00	36.48	M	C
ATOM	6603	O	LYS	M	252	28.238	52.376	44.523	1.00	39.36	M	O
ATOM	6604	N	LEU	M	253	29.324	52.510	42.567	1.00	33.62	M	N
ATOM	6605	CA	LEU	M	253	30.311	51.492	42.889	1.00	33.35	M	C
ATOM	6606	CB	LEU	M	253	30.354	50.437	41.785	1.00	23.20	M	C
ATOM	6607	CG	LEU	M	253	29.253	49.382	41.643	1.00	24.74	M	C
ATOM	6608	CD1	LEU	M	253	28.043	49.747	42.470	1.00	19.54	M	C
ATOM	6609	CD2	LEU	M	253	28.911	49.226	40.157	1.00	21.04	M	C
ATOM	6610	C	LEU	M	253	31.691	52.126	43.017	1.00	34.71	M	C
ATOM	6611	O	LEU	M	253	31.974	53.154	42.389	1.00	32.29	M	O
ATOM	6612	N	GLU	M	254	32.543	51.509	43.834	1.00	47.38	M	N
ATOM	6613	CA	GLU	M	254	33.904	51.989	44.042	1.00	49.05	M	C
ATOM	6614	CB	GLU	M	254	34.276	51.960	45.522	1.00	126.42	M	C
ATOM	6615	CG	GLU	M	254	33.618	53.009	46.370	1.00	95.71	M	C
ATOM	6616	CD	GLU	M	254	34.254	53.090	47.733	1.00	95.71	M	C
ATOM	6617	OE1	GLU	M	254	35.460	53.404	47.809	1.00	95.71	M	O
ATOM	6618	OE2	GLU	M	254	33.555	52.832	48.729	1.00	95.71	M	O
ATOM	6619	C	GLU	M	254	34.874	51.094	43.296	1.00	49.84	M	C
ATOM	6620	O	GLU	M	254	34.634	49.892	43.158	1.00	49.56	M	O
ATOM	6621	N	GLU	M	255	35.966	51.678	42.813	1.00	35.59	M	N
ATOM	6622	CA	GLU	M	255	36.978	50.896	42.122	1.00	34.49	M	C
ATOM	6623	CB	GLU	M	255	38.213	51.737	41.832	1.00	65.05	M	C
ATOM	6624	CG	GLU	M	255	39.368	50.906	41.317	1.00	65.05	M	C
ATOM	6625	CD	GLU	M	255	40.607	51.724	41.053	1.00	65.05	M	C
ATOM	6626	OE1	GLU	M	255	41.623	51.130	40.630	1.00	65.05	M	O
ATOM	6627	OE2	GLU	M	255	40.563	52.955	41.264	1.00	65.05	M	O
ATOM	6628	C	GLU	M	255	37.372	49.729	43.026	1.00	36.94	M	C
ATOM	6629	O	GLU	M	255	37.699	49.914	44.202	1.00	40.17	M	O
ATOM	6630	N	GLY	M	256	37.333	48.525	42.474	1.00	30.63	M	N
ATOM	6631	CA	GLY	M	256	37.677	47.363	43.258	1.00	30.63	M	C
ATOM	6632	C	GLY	M	256	36.454	46.518	43.541	1.00	30.63	M	C
ATOM	6633	O	GLY	M	256	36.572	45.324	43.805	1.00	30.63	M	O
ATOM	6634	N	ASP	M	257	35.278	47.134	43.500	1.00	29.80	M	N
ATOM	6635	CA	ASP	M	257	34.043	46.402	43.747	1.00	33.08	M	C
ATOM	6636	CB	ASP	M	257	32.845	47.350	43.813	1.00	53.30	M	C
ATOM	6637	CG	ASP	M	257	32.821	48.183	45.072	1.00	53.30	M	C
ATOM	6638	OD1	ASP	M	257	33.415	47.751	46.084	1.00	53.30	M	O
ATOM	6639	OD2	ASP	M	257	32.187	49.261	45.053	1.00	53.30	M	O
ATOM	6640	C	ASP	M	257	33.784	45.390	42.639	1.00	32.87	M	C
ATOM	6641	O	ASP	M	257	34.296	45.524	41.519	1.00	37.33	M	O
ATOM	6642	N	GLU	M	258	32.982	44.378	42.959	1.00	43.99	M	N
ATOM	6643	CA	GLU	M	258	32.620	43.346	41.996	1.00	40.65	M	C
ATOM	6644	CB	GLU	M	258	33.300	42.020	42.337	1.00	59.60	M	C
ATOM	6645	CG	GLU	M	258	34.785	41.971	42.013	1.00	59.60	M	C
ATOM	6646	CD	GLU	M	258	35.410	40.634	42.374	1.00	59.60	M	C
ATOM	6647	OE1	GLU	M	258	36.563	40.372	41.967	1.00	59.60	M	O
ATOM	6648	OE2	GLU	M	258	34.749	39.840	43.073	1.00	59.60	M	O
ATOM	6649	C	GLU	M	258	31.114	43.171	42.025	1.00	39.36	M	C
ATOM	6650	O	GLU	M	258	30.479	43.361	43.063	1.00	39.36	M	O
ATOM	6651	N	LEU	M	259	30.537	42.842	40.879	1.00	23.56	M	N
ATOM	6652	CA	LEU	M	259	29.099	42.624	40.797	1.00	20.03	M	C
ATOM	6653	CB	LEU	M	259	28.468	43.559	39.764	1.00	24.25	M	C
ATOM	6654	CG	LEU	M	259	28.539	45.073	39.968	1.00	24.25	M	C
ATOM	6655	CD1	LEU	M	259	28.065	45.758	38.692	1.00	24.25	M	C
ATOM	6656	CD2	LEU	M	259	27.685	45.493	41.153	1.00	24.25	M	C
ATOM	6657	C	LEU	M	259	28.944	41.184	40.347	1.00	17.37	M	C
ATOM	6658	O	LEU	M	259	29.677	40.733	39.466	1.00	21.45	M	O
ATOM	6659	N	GLN	M	260	28.008	40.461	40.947	1.00	28.13	M	N
ATOM	6660	CA	GLN	M	260	27.785	39.067	40.587	1.00	26.89	M	C
ATOM	6661	CB	GLN	M	260	28.467	38.150	41.607	1.00	38.69	M	C
ATOM	6662	CG	GLN	M	260	27.710	38.038	42.926	1.00	38.69	M	C
ATOM	6663	CD	GLN	M	260	28.458	37.253	43.988	1.00	38.69	M	C

Figure 8-102

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ATOM 6664  OE1 GLN M 260      27.871  36.857  44.996  1.00 38.69      M    O
ATOM 6665  NE2 GLN M 260      29.757  37.036  43.778  1.00 38.69      M    N
ATOM 6666  C   GLN M 260      26.287  38.792  40.585  1.00 26.88      M    C
ATOM 6667  O   GLN M 260      25.544  39.425  41.331  1.00 24.41      M    O
ATOM 6668  N   LEU M 261      25.838  37.858  39.752  1.00 32.64      M    N
ATOM 6669  CA  LEU M 261      24.424  37.515  39.705  1.00 32.95      M    C
ATOM 6670  CB  LEU M 261      23.953  37.491  38.259  1.00 16.33      M    C
ATOM 6671  CG  LEU M 261      22.439  37.400  38.063  1.00 16.33      M    C
ATOM 6672  CD1 LEU M 261      22.086  37.901  36.670  1.00 16.33      M    C
ATOM 6673  CD2 LEU M 261      21.946  35.970  38.273  1.00 16.33      M    C
ATOM 6674  C   LEU M 261      24.258  36.144  40.363  1.00 36.62      M    C
ATOM 6675  O   LEU M 261      24.814  35.153  39.890  1.00 37.29      M    O
ATOM 6676  N   ALA M 262      23.493  36.084  41.452  1.00 25.24      M    N
ATOM 6677  CA  ALA M 262      23.311  34.829  42.182  1.00 27.64      M    C
ATOM 6678  CB  ALA M 262      23.916  34.955  43.563  1.00  6.96      M    C
ATOM 6679  C   ALA M 262      21.885  34.351  42.324  1.00 26.94      M    C
ATOM 6680  O   ALA M 262      21.000  35.133  42.628  1.00 26.97      M    O
ATOM 6681  N   ILE M 263      21.676  33.054  42.128  1.00 20.81      M    N
ATOM 6682  CA  ILE M 263      20.360  32.435  42.265  1.00 19.85      M    C
ATOM 6683  CB  ILE M 263      20.097  31.488  41.111  1.00 22.15      M    C
ATOM 6684  CG2 ILE M 263      18.759  30.796  41.308  1.00 22.15      M    C
ATOM 6685  CG1 ILE M 263      20.125  32.271  39.801  1.00 22.15      M    C
ATOM 6686  CD1 ILE M 263      20.063  31.402  38.551  1.00 22.15      M    C
ATOM 6687  C   ILE M 263      20.326  31.653  43.582  1.00 18.17      M    C
ATOM 6688  O   ILE M 263      21.035  30.668  43.738  1.00 17.92      M    O
ATOM 6689  N   PRO M 264      19.500  32.088  44.545  1.00 34.72      M    N
ATOM 6690  CD  PRO M 264      18.648  33.277  44.434  1.00 12.04      M    C
ATOM 6691  CA  PRO M 264      19.346  31.475  45.873  1.00 34.72      M    C
ATOM 6692  CB  PRO M 264      18.534  32.508  46.646  1.00 12.04      M    C
ATOM 6693  CG  PRO M 264      18.682  33.773  45.840  1.00 12.04      M    C
ATOM 6694  C   PRO M 264      18.642  30.138  45.850  1.00 34.72      M    C
ATOM 6695  O   PRO M 264      17.607  29.967  46.487  1.00 34.72      M    O
ATOM 6696  N   ARG M 265      19.219  29.184  45.138  1.00 44.06      M    N
ATOM 6697  CA  ARG M 265      18.629  27.866  45.020  1.00 44.06      M    C
ATOM 6698  CB  ARG M 265      17.550  27.927  43.947  1.00 72.36      M    C
ATOM 6699  CG  ARG M 265      16.907  26.612  43.616  1.00 72.36      M    C
ATOM 6700  CD  ARG M 265      15.867  26.236  44.634  1.00 72.36      M    C
ATOM 6701  NE  ARG M 265      15.289  24.938  44.312  1.00 72.36      M    N
ATOM 6702  CZ  ARG M 265      14.335  24.355  45.024  1.00 72.36      M    C
ATOM 6703  NH1 ARG M 265      13.850  24.962  46.099  1.00 72.36      M    N
ATOM 6704  NH2 ARG M 265      13.872  23.167  44.664  1.00 72.36      M    N
ATOM 6705  C   ARG M 265      19.713  26.855  44.635  1.00 44.06      M    C
ATOM 6706  O   ARG M 265      20.598  27.166  43.833  1.00 44.06      M    O
ATOM 6707  N   GLU M 266      19.668  25.655  45.210  1.00 47.02      M    N
ATOM 6708  CA  GLU M 266      20.660  24.643  44.856  1.00 47.02      M    C
ATOM 6709  CB  GLU M 266      20.748  23.565  45.938  1.00110.72      M    C
ATOM 6710  CG  GLU M 266      21.518  24.021  47.169  1.00110.72      M    C
ATOM 6711  CD  GLU M 266      21.675  22.928  48.204  1.00110.72      M    C
ATOM 6712  OE1 GLU M 266      22.134  21.823  47.842  1.00110.72      M    O
ATOM 6713  OE2 GLU M 266      21.345  23.176  49.383  1.00110.72      M    O
ATOM 6714  C   GLU M 266      20.246  24.045  43.522  1.00 47.02      M    C
ATOM 6715  O   GLU M 266      19.122  23.574  43.373  1.00 47.02      M    O
ATOM 6716  N   ASN M 267      21.151  24.084  42.549  1.00 70.52      M    N
ATOM 6717  CA  ASN M 267      20.857  23.571  41.215  1.00 70.52      M    C
ATOM 6718  CB  ASN M 267      20.681  22.054  41.251  1.00 72.76      M    C
ATOM 6719  CG  ASN M 267      21.931  21.351  41.727  1.00 72.76      M    C
ATOM 6720  OD1 ASN M 267      22.224  21.319  42.925  1.00 72.76      M    O
ATOM 6721  ND2 ASN M 267      22.696  20.807  40.786  1.00 72.76      M    N
ATOM 6722  C   ASN M 267      19.602  24.256  40.707  1.00 70.52      M    C
ATOM 6723  O   ASN M 267      18.562  23.633  40.523  1.00 70.52      M    O
ATOM 6724  N   ALA M 268      19.737  25.560  40.491  1.00 63.93      M    N
ATOM 6725  CA  ALA M 268      18.661  26.418  40.031  1.00 63.93      M    C
ATOM 6726  CB  ALA M 268      19.238  27.697  39.460  1.00 62.56      M    C
ATOM 6727  C   ALA M 268      17.692  25.820  39.030  1.00 63.93      M    C
ATOM 6728  O   ALA M 268      16.506  25.687  39.325  1.00 63.93      M    O
ATOM 6729  N   GLN M 269      18.193  25.471  37.850  1.00 34.44      M    N
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Figure 8-103

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ATOM 6730  CA  GLN M 269      17.347  24.937  36.774  1.00 32.37      M    C
ATOM 6731  CB  GLN M 269      16.090  24.264  37.334  1.00 50.58      M    C
ATOM 6732  CG  GLN M 269      15.589  23.111  36.517  1.00 43.23      M    C
ATOM 6733  CD  GLN M 269      16.658  22.050  36.318  1.00 43.23      M    C
ATOM 6734  OE1 GLN M 269      17.442  21.758  37.229  1.00 43.23      M    O
ATOM 6735  NE2 GLN M 269      16.690  21.457  35.123  1.00 43.23      M    N
ATOM 6736  C   GLN M 269      16.946  26.160  35.941  1.00 33.06      M    C
ATOM 6737  O   GLN M 269      15.786  26.572  35.932  1.00 31.65      M    O
ATOM 6738  N   ILE M 270      17.928  26.737  35.255  1.00 31.58      M    N
ATOM 6739  CA  ILE M 270      17.717  27.930  34.458  1.00 29.79      M    C
ATOM 6740  CB  ILE M 270      18.688  29.019  34.914  1.00 18.12      M    C
ATOM 6741  CG2 ILE M 270      18.451  29.328  36.383  1.00 21.68      M    C
ATOM 6742  CG1 ILE M 270      20.129  28.544  34.733  1.00 21.68      M    C
ATOM 6743  CD1 ILE M 270      21.165  29.618  35.018  1.00 18.12      M    C
ATOM 6744  C   ILE M 270      17.863  27.675  32.960  1.00 29.43      M    C
ATOM 6745  O   ILE M 270      17.809  26.537  32.533  1.00 27.41      M    O
ATOM 6746  N   SER M 271      18.064  28.714  32.155  1.00 39.24      M    N
ATOM 6747  CA  SER M 271      18.151  28.494  30.718  1.00 39.90      M    C
ATOM 6748  CB  SER M 271      17.252  29.471  29.979  1.00 45.27      M    C
ATOM 6749  OG  SER M 271      17.140  29.085  28.618  1.00 40.03      M    O
ATOM 6750  C   SER M 271      19.503  28.480  30.023  1.00 37.21      M    C
ATOM 6751  O   SER M 271      19.684  27.747  29.056  1.00 38.57      M    O
ATOM 6752  N   LEU M 272      20.454  29.279  30.470  1.00 18.38      M    N
ATOM 6753  CA  LEU M 272      21.767  29.275  29.816  1.00 16.88      M    C
ATOM 6754  CB  LEU M 272      22.430  27.894  29.922  1.00 22.78      M    C
ATOM 6755  CG  LEU M 272      23.075  27.501  31.253  1.00 31.93      M    C
ATOM 6756  CD1 LEU M 272      24.230  28.417  31.546  1.00 31.93      M    C
ATOM 6757  CD2 LEU M 272      22.071  27.582  32.361  1.00 31.93      M    C
ATOM 6758  C   LEU M 272      21.722  29.686  28.344  1.00 23.24      M    C
ATOM 6759  O   LEU M 272      22.714  29.577  27.636  1.00 21.64      M    O
ATOM 6760  N   ASP M 273      20.568  30.151  27.885  1.00 32.47      M    N
ATOM 6761  CA  ASP M 273      20.416  30.608  26.505  1.00 27.64      M    C
ATOM 6762  CB  ASP M 273      18.947  30.542  26.120  1.00 65.62      M    C
ATOM 6763  CG  ASP M 273      18.738  29.952  24.759  1.00 65.62      M    C
ATOM 6764  OD1 ASP M 273      19.268  28.845  24.515  1.00 65.62      M    O
ATOM 6765  OD2 ASP M 273      18.043  30.593  23.938  1.00 65.62      M    O
ATOM 6766  C   ASP M 273      20.924  32.064  26.486  1.00 29.30      M    C
ATOM 6767  O   ASP M 273      20.334  32.949  27.093  1.00 32.63      M    O
ATOM 6768  N   GLY M 274      22.027  32.301  25.790  1.00 42.34      M    N
ATOM 6769  CA  GLY M 274      22.646  33.622  25.740  1.00 42.34      M    C
ATOM 6770  C   GLY M 274      21.790  34.855  25.522  1.00 42.34      M    C
ATOM 6771  O   GLY M 274      22.171  35.971  25.900  1.00 42.34      M    O
ATOM 6772  N   ASP M 275      20.621  34.659  24.931  1.00 23.13      M    N
ATOM 6773  CA  ASP M 275      19.700  35.767  24.642  1.00 23.13      M    C
ATOM 6774  CB  ASP M 275      19.098  35.579  23.248  1.00 37.12      M    C
ATOM 6775  CG  ASP M 275      18.189  34.350  23.172  1.00 37.12      M    C
ATOM 6776  OD1 ASP M 275      18.099  33.598  24.180  1.00 37.12      M    O
ATOM 6777  OD2 ASP M 275      17.576  34.124  22.110  1.00 37.12      M    O
ATOM 6778  C   ASP M 275      18.546  35.892  25.636  1.00 23.13      M    C
ATOM 6779  O   ASP M 275      17.604  36.645  25.396  1.00 23.13      M    O
ATOM 6780  N   VAL M 276      18.590  35.140  26.726  1.00 25.08      M    N
ATOM 6781  CA  VAL M 276      17.514  35.229  27.688  1.00 24.19      M    C
ATOM 6782  CB  VAL M 276      16.532  34.022  27.537  1.00 24.28      M    C
ATOM 6783  CG1 VAL M 276      17.147  32.754  28.087  1.00 24.28      M    C
ATOM 6784  CG2 VAL M 276      15.229  34.330  28.248  1.00 24.28      M    C
ATOM 6785  C   VAL M 276      18.088  35.322  29.109  1.00 22.30      M    C
ATOM 6786  O   VAL M 276      17.417  35.766  30.043  1.00 22.69      M    O
ATOM 6787  N   THR M 277      19.342  34.912  29.258  1.00 25.73      M    N
ATOM 6788  CA  THR M 277      20.026  34.978  30.545  1.00 25.82      M    C
ATOM 6789  CB  THR M 277      20.352  33.576  31.080  1.00 21.65      M    C
ATOM 6790  OG1 THR M 277      19.120  32.900  31.362  1.00 22.38      M    O
ATOM 6791  CG2 THR M 277      21.193  33.655  32.345  1.00 23.08      M    C
ATOM 6792  C   THR M 277      21.313  35.769  30.350  1.00 24.09      M    C
ATOM 6793  O   THR M 277      22.301  35.241  29.856  1.00 26.27      M    O
ATOM 6794  N   PHE M 278      21.280  37.044  30.726  1.00 21.48      M    N
ATOM 6795  CA  PHE M 278      22.430  37.928  30.579  1.00 15.65      M    C
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Figure 8-104

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ATOM 6796  CB  PHE M 278      22.301  38.749  29.299  1.00 21.78      M    C
ATOM 6797  CG  PHE M 278      20.945  39.339  29.106  1.00 21.78      M    C
ATOM 6798  CD1 PHE M 278      20.655  40.619  29.562  1.00 21.78      M    C
ATOM 6799  CD2 PHE M 278      19.942  38.607  28.480  1.00 21.78      M    C
ATOM 6800  CE1 PHE M 278      19.379  41.163  29.392  1.00 21.78      M    C
ATOM 6801  CE2 PHE M 278      18.667  39.140  28.307  1.00 21.78      M    C
ATOM 6802  CZ  PHE M 278      18.384  40.417  28.762  1.00 21.78      M    C
ATOM 6803  C   PHE M 278      22.585  38.847  31.783  1.00 18.11      M    C
ATOM 6804  O   PHE M 278      21.664  39.024  32.572  1.00 23.27      M    O
ATOM 6805  N   PHE M 279      23.764  39.440  31.895  1.00 27.58      M    N
ATOM 6806  CA  PHE M 279      24.110  40.295  33.013  1.00 26.98      M    C
ATOM 6807  CB  PHE M 279      24.883  39.427  34.005  1.00 25.11      M    C
ATOM 6808  CG  PHE M 279      25.275  40.119  35.267  1.00 22.18      M    C
ATOM 6809  CD1 PHE M 279      24.449  41.059  35.851  1.00 24.66      M    C
ATOM 6810  CD2 PHE M 279      26.467  39.782  35.904  1.00 19.58      M    C
ATOM 6811  CE1 PHE M 279      24.806  41.650  37.051  1.00 24.95      M    C
ATOM 6812  CE2 PHE M 279      26.831  40.368  37.106  1.00 20.32      M    C
ATOM 6813  CZ  PHE M 279      26.007  41.299  37.680  1.00 22.73      M    C
ATOM 6814  C   PHE M 279      24.965  41.429  32.452  1.00 30.96      M    C
ATOM 6815  O   PHE M 279      25.842  41.188  31.622  1.00 28.47      M    O
ATOM 6816  N   GLY M 280      24.709  42.666  32.878  1.00 17.96      M    N
ATOM 6817  CA  GLY M 280      25.484  43.770  32.341  1.00 18.65      M    C
ATOM 6818  C   GLY M 280      25.511  45.040  33.160  1.00 18.53      M    C
ATOM 6819  O   GLY M 280      24.675  45.243  34.044  1.00 18.20      M    O
ATOM 6820  N   ALA M 281      26.483  45.897  32.854  1.00 27.03      M    N
ATOM 6821  CA  ALA M 281      26.652  47.163  33.554  1.00 27.03      M    C
ATOM 6822  CB  ALA M 281      27.703  47.027  34.646  1.00 15.27      M    C
ATOM 6823  C   ALA M 281      27.055  48.257  32.588  1.00 27.03      M    C
ATOM 6824  O   ALA M 281      27.907  48.061  31.720  1.00 27.03      M    O
ATOM 6825  N   LEU M 282      26.432  49.415  32.751  1.00 27.34      M    N
ATOM 6826  CA  LEU M 282      26.709  50.562  31.904  1.00 25.23      M    C
ATOM 6827  CB  LEU M 282      25.452  50.927  31.117  1.00 35.61      M    C
ATOM 6828  CG  LEU M 282      25.532  51.933  29.970  1.00 39.61      M    C
ATOM 6829  CD1 LEU M 282      24.132  52.170  29.453  1.00 36.04      M    C
ATOM 6830  CD2 LEU M 282      26.125  53.235  30.425  1.00 41.51      M    C
ATOM 6831  C   LEU M 282      27.102  51.720  32.822  1.00 26.10      M    C
ATOM 6832  O   LEU M 282      26.392  52.020  33.783  1.00 25.43      M    O
ATOM 6833  N   LYS M 283      28.230  52.364  32.534  1.00 26.78      M    N
ATOM 6834  CA  LYS M 283      28.653  53.488  33.351  1.00 28.29      M    C
ATOM 6835  CB  LYS M 283      30.164  53.673  33.314  1.00 46.80      M    C
ATOM 6836  CG  LYS M 283      30.592  54.750  34.273  1.00 50.47      M    C
ATOM 6837  CD  LYS M 283      32.073  54.930  34.325  1.00 45.32      M    C
ATOM 6838  CE  LYS M 283      32.417  55.967  35.386  1.00 44.72      M    C
ATOM 6839  NZ  LYS M 283      33.881  56.219  35.457  1.00 46.64      M    N
ATOM 6840  C   LYS M 283      27.988  54.802  32.933  1.00 31.32      M    C
ATOM 6841  O   LYS M 283      28.156  55.269  31.809  1.00 30.39      M    O
ATOM 6842  N   LEU M 284      27.235  55.387  33.859  1.00 33.95      M    N
ATOM 6843  CA  LEU M 284      26.556  56.640  33.612  1.00 37.30      M    C
ATOM 6844  CB  LEU M 284      25.601  56.953  34.758  1.00 25.63      M    C
ATOM 6845  CG  LEU M 284      24.483  55.920  34.865  1.00 22.92      M    C
ATOM 6846  CD1 LEU M 284      23.526  56.272  35.997  1.00 20.86      M    C
ATOM 6847  CD2 LEU M 284      23.746  55.876  33.535  1.00 24.30      M    C
ATOM 6848  C   LEU M 284      27.591  57.733  33.489  1.00 39.97      M    C
ATOM 6849  O   LEU M 284      28.522  57.812  34.287  1.00 41.76      M    O
ATOM 6850  N   LEU M 285      27.432  58.568  32.472  1.00 37.07      M    N
ATOM 6851  CA  LEU M 285      28.349  59.671  32.235  1.00 37.07      M    C
ATOM 6852  CB  LEU M 285      27.998  60.370  30.928  1.00 95.38      M    C
ATOM 6853  CG  LEU M 285      29.205  61.001  30.249  1.00 95.38      M    C
ATOM 6854  CD1 LEU M 285      30.120  59.903  29.730  1.00 95.38      M    C
ATOM 6855  CD2 LEU M 285      28.745  61.879  29.113  1.00 95.38      M    C
ATOM 6856  C   LEU M 285      28.276  60.667  33.385  1.00 37.07      M    C
ATOM 6857  O   LEU M 285      29.328  61.208  33.771  1.00 38.53      M    O
ATOM 6858  OXT LEU M 285      27.158  60.904  33.884  1.00 81.24      M    O
END
```

Figure 9a

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1    MDDSTEREQS RLTSCLKKRE EMKLKECVSI LPRKESPSVR SSKDGKLLAA
51   TLLLALLSCC LTVVSFYQVA ALQGDLASLR AELQGHHAEK LPAGAGAPKA
101  GLEEAPAVTA GLKIFEPPAP GEGNSSQNSR NKRAVQGPEE TVTQDCLQLI
151  ADSETPTIQK GSYTFVPWLL SFKRGSALEE KENKILVKET GYFFIYGQVL
201  YTDKTYAMGH LIQRKKVHVF GDELSLVTLF RCIQNMPETL PNNSCYSAGI
251  AKLEEGDELQ LAIPRENAQI SLDGDVTFFG ALKLL
```

Figure 9b

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1    EQKLISEEDL NKELQGPEET VTQDCLQLIA DSETPTIQKG SYTFVPWLLS
51   FKRGSALEEK ENKILVKETG YFFIYGQVLY TDKTYAMGHL IQRKKVHVFG
101  DELSLVTLFR CIQNMPETLP NNSCYSAGIA KLEEGDELQL AIPRENAQIS
151  LDGDVTFFGA LKLL
```

Figure 9c

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1   MPASSPFLLA PKGPPGNMGG  PVREPALSVA LWLSWGAALG AVACAMALLT
51  QQTELQSLRR EVSRLQGTGG  PSQNGEGYPW QSLPEQSSDA LEAWENGERS
101 RKRRAVLTQK QKK[QHSVLHL VPINATSKDD SDVTEVMWQP ALRRGRGLQA
151 QGYGVRIQDA GVYLLYSQVL  FQDVTFTMGQ VVSREGQGRQ ETLFRCIRSM
201 PSHPDRAYNS CYSAGVFHLH  QGDILSVIIP RARAKLNLSP HGTFLGFVKL]
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Figure 10-1

FIGURE 10

	Atom	Type	Resid	#	X	Y	Z	Occ	B	Mol	
ATOM	1	N	GLN	A 114	-41.355	36.701	55.527	1.00	54.74	A	N
ATOM	2	CA	GLN	A 114	-42.766	36.889	55.483	1.00	54.74	A	C
ATOM	3	C	GLN	A 114	-42.998	38.183	56.169	1.00	54.74	A	C
ATOM	4	O	GLN	A 114	-42.790	38.298	57.374	1.00	54.74	A	O
ATOM	5	CB	GLN	A 114	-43.564	35.814	56.242	1.00	54.74	A	C
ATOM	6	CG	GLN	A 114	-43.433	34.410	55.646	1.00	54.74	A	C
ATOM	7	CD	GLN	A 114	-44.265	33.465	56.502	1.00	54.74	A	C
ATOM	8	OE1	GLN	A 114	-44.890	33.881	57.476	1.00	54.74	A	O
ATOM	9	NE2	GLN	A 114	-44.275	32.157	56.130	1.00	54.74	A	N
ATOM	10	N	HIS	A 115	-43.406	39.212	55.409	1.00	53.85	A	N
ATOM	11	CA	HIS	A 115	-43.630	40.477	56.031	1.00	53.85	A	C
ATOM	12	C	HIS	A 115	-44.879	40.345	56.834	1.00	53.85	A	C
ATOM	13	O	HIS	A 115	-45.881	39.824	56.351	1.00	53.85	A	O
ATOM	14	CB	HIS	A 115	-43.832	41.625	55.028	1.00	53.85	A	C
ATOM	15	CG	HIS	A 115	-44.970	41.374	54.084	1.00	53.85	A	C
ATOM	16	ND1	HIS	A 115	-46.295	41.586	54.395	1.00	53.85	A	N
ATOM	17	CD2	HIS	A 115	-44.959	40.908	52.805	1.00	53.85	A	C
ATOM	18	CE1	HIS	A 115	-47.014	41.240	53.297	1.00	53.85	A	C
ATOM	19	NE2	HIS	A 115	-46.246	40.823	52.308	1.00	53.85	A	N
ATOM	20	N	SER	A 116	-44.846	40.818	58.094	1.00	49.07	A	N
ATOM	21	CA	SER	A 116	-46.009	40.711	58.924	1.00	49.07	A	C
ATOM	22	C	SER	A 116	-46.967	41.767	58.483	1.00	49.07	A	C
ATOM	23	O	SER	A 116	-46.563	42.787	57.926	1.00	49.07	A	O
ATOM	24	CB	SER	A 116	-45.729	40.953	60.417	1.00	49.07	A	C
ATOM	25	OG	SER	A 116	-44.862	39.950	60.923	1.00	49.07	A	O
ATOM	26	N	VAL	A 117	-48.275	41.527	58.698	1.00	46.78	A	N
ATOM	27	CA	VAL	A 117	-49.263	42.500	58.331	1.00	46.78	A	C
ATOM	28	C	VAL	A 117	-50.485	42.230	59.154	1.00	46.78	A	C
ATOM	29	O	VAL	A 117	-50.732	41.098	59.567	1.00	46.78	A	O
ATOM	30	CB	VAL	A 117	-49.704	42.395	56.897	1.00	46.78	A	C
ATOM	31	CG1	VAL	A 117	-48.496	42.631	55.979	1.00	46.78	A	C
ATOM	32	CG2	VAL	A 117	-50.385	41.030	56.699	1.00	46.78	A	C
ATOM	33	N	LEU	A 118	-51.283	43.282	59.422	1.00	46.47	A	N
ATOM	34	CA	LEU	A 118	-52.496	43.119	60.173	1.00	46.47	A	C
ATOM	35	C	LEU	A 118	-53.497	44.039	59.545	1.00	46.47	A	C
ATOM	36	O	LEU	A 118	-53.161	45.161	59.165	1.00	46.47	A	O
ATOM	37	CB	LEU	A 118	-52.313	43.493	61.662	1.00	46.47	A	C
ATOM	38	CG	LEU	A 118	-53.523	43.268	62.600	1.00	46.47	A	C
ATOM	39	CD1	LEU	A 118	-53.127	43.551	64.059	1.00	46.47	A	C
ATOM	40	CD2	LEU	A 118	-54.757	44.091	62.199	1.00	46.47	A	C
ATOM	41	N	HIS	A 119	-54.760	43.588	59.393	1.00	47.74	A	N
ATOM	42	CA	HIS	A 119	-55.721	44.472	58.802	1.00	47.74	A	C
ATOM	43	C	HIS	A 119	-57.013	44.419	59.558	1.00	47.74	A	C
ATOM	44	O	HIS	A 119	-57.412	43.377	60.077	1.00	47.74	A	O
ATOM	45	CB	HIS	A 119	-55.966	44.212	57.304	1.00	47.74	A	C
ATOM	46	CG	HIS	A 119	-55.878	42.766	56.921	1.00	47.74	A	C
ATOM	47	ND1	HIS	A 119	-54.691	42.095	56.724	1.00	47.74	A	N
ATOM	48	CD2	HIS	A 119	-56.858	41.853	56.694	1.00	47.74	A	C
ATOM	49	CE1	HIS	A 119	-55.014	40.819	56.391	1.00	47.74	A	C
ATOM	50	NE2	HIS	A 119	-56.319	40.625	56.359	1.00	47.74	A	N
ATOM	51	N	LEU	A 120	-57.684	45.588	59.650	1.00	49.98	A	N
ATOM	52	CA	LEU	A 120	-58.932	45.732	60.349	1.00	49.98	A	C
ATOM	53	C	LEU	A 120	-59.995	46.082	59.353	1.00	49.98	A	C
ATOM	54	O	LEU	A 120	-59.729	46.734	58.343	1.00	49.98	A	O
ATOM	55	CB	LEU	A 120	-58.936	46.849	61.409	1.00	49.98	A	C
ATOM	56	CG	LEU	A 120	-58.042	46.553	62.629	1.00	49.98	A	C
ATOM	57	CD1	LEU	A 120	-56.571	46.420	62.219	1.00	49.98	A	C
ATOM	58	CD2	LEU	A 120	-58.240	47.587	63.747	1.00	49.98	A	C
ATOM	59	N	VAL	A 121	-61.240	45.644	59.638	1.00	49.34	A	N
ATOM	60	CA	VAL	A 121	-62.390	45.798	58.786	1.00	49.34	A	C
ATOM	61	C	VAL	A 121	-63.485	46.361	59.667	1.00	49.34	A	C
ATOM	62	O	VAL	A 121	-63.621	45.940	60.812	1.00	49.34	A	O
ATOM	63	CB	VAL	A 121	-62.755	44.414	58.281	1.00	49.34	A	C

Figure 10-2

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ATOM     64  CG1 VAL A 121     -63.973  44.391  57.348  1.00 49.34      A    C
ATOM     65  CG2 VAL A 121     -61.484  43.840  57.633  1.00 49.34      A    C
ATOM     66  N   PRO A 122     -64.270  47.301  59.197  1.00 47.62      A    N
ATOM     67  CA  PRO A 122     -65.267  47.917  60.027  1.00 47.62      A    C
ATOM     68  C   PRO A 122     -66.238  46.887  60.492  1.00 47.62      A    C
ATOM     69  O   PRO A 122     -66.488  45.928  59.761  1.00 47.62      A    O
ATOM     70  CB  PRO A 122     -65.998  48.885  59.137  1.00 47.62      A    C
ATOM     71  CG  PRO A 122     -66.019  48.115  57.811  1.00 47.62      A    C
ATOM     72  CD  PRO A 122     -64.756  47.235  57.848  1.00 47.62      A    C
ATOM     73  N   ILE A 123     -66.812  47.086  61.694  1.00 42.63      A    N
ATOM     74  CA  ILE A 123     -67.770  46.154  62.199  1.00 42.63      A    C
ATOM     75  C   ILE A 123     -69.136  46.756  62.041  1.00 42.63      A    C
ATOM     76  O   ILE A 123     -69.517  47.710  62.717  1.00 42.63      A    O
ATOM     77  CB  ILE A 123     -67.542  45.777  63.641  1.00 42.63      A    C
ATOM     78  CG1 ILE A 123     -68.539  44.688  64.066  1.00 42.63      A    C
ATOM     79  CG2 ILE A 123     -67.563  47.044  64.513  1.00 42.63      A    C
ATOM     80  CD1 ILE A 123     -68.318  43.355  63.352  1.00 42.63      A    C
ATOM     81  N   ASN A 124     -69.919  46.174  61.119  1.00 35.86      A    N
ATOM     82  CA  ASN A 124     -71.244  46.626  60.809  1.00 35.86      A    C
ATOM     83  C   ASN A 124     -72.102  46.410  62.016  1.00 35.86      A    C
ATOM     84  O   ASN A 124     -73.088  47.112  62.233  1.00 35.86      A    O
ATOM     85  CB  ASN A 124     -71.859  45.850  59.630  1.00 35.86      A    C
ATOM     86  CG  ASN A 124     -73.175  46.506  59.226  1.00 35.86      A    C
ATOM     87  OD1 ASN A 124     -74.135  46.543  59.994  1.00 35.86      A    O
ATOM     88  ND2 ASN A 124     -73.227  47.032  57.972  1.00 35.86      A    N
ATOM     89  N   ALA A 125     -71.741  45.399  62.822  1.00 31.82      A    N
ATOM     90  CA  ALA A 125     -72.499  45.004  63.972  1.00 31.82      A    C
ATOM     91  C   ALA A 125     -72.579  46.099  64.997  1.00 31.82      A    C
ATOM     92  O   ALA A 125     -73.640  46.303  65.584  1.00 31.82      A    O
ATOM     93  CB  ALA A 125     -71.904  43.770  64.671  1.00 31.82      A    C
ATOM     94  N   THR A 126     -71.487  46.853  65.242  1.00 29.76      A    N
ATOM     95  CA  THR A 126     -71.563  47.769  66.348  1.00 29.76      A    C
ATOM     96  C   THR A 126     -71.616  49.187  65.866  1.00 29.76      A    C
ATOM     97  O   THR A 126     -71.193  49.507  64.756  1.00 29.76      A    O
ATOM     98  CB  THR A 126     -70.404  47.643  67.295  1.00 29.76      A    C
ATOM     99  OG1 THR A 126     -70.272  46.293  67.716  1.00 29.76      A    O
ATOM    100  CG2 THR A 126     -70.687  48.519  68.527  1.00 29.76      A    C
ATOM    101  N   SER A 127     -72.173  50.079  66.715  1.00 31.01      A    N
ATOM    102  CA  SER A 127     -72.316  51.470  66.400  1.00 31.01      A    C
ATOM    103  C   SER A 127     -70.973  52.120  66.480  1.00 31.01      A    C
ATOM    104  O   SER A 127     -70.036  51.585  67.070  1.00 31.01      A    O
ATOM    105  CB  SER A 127     -73.254  52.223  67.357  1.00 31.01      A    C
ATOM    106  OG  SER A 127     -72.710  52.226  68.668  1.00 31.01      A    O
ATOM    107  N   LYS A 128     -70.864  53.316  65.870  1.00 36.69      A    N
ATOM    108  CA  LYS A 128     -69.634  54.047  65.795  1.00 36.69      A    C
ATOM    109  C   LYS A 128     -69.293  54.547  67.161  1.00 36.69      A    C
ATOM    110  O   LYS A 128     -70.177  54.885  67.948  1.00 36.69      A    O
ATOM    111  CB  LYS A 128     -69.732  55.263  64.863  1.00 36.69      A    C
ATOM    112  CG  LYS A 128     -68.379  55.832  64.453  1.00 36.69      A    C
ATOM    113  CD  LYS A 128     -67.603  54.895  63.535  1.00 36.69      A    C
ATOM    114  CE  LYS A 128     -68.509  53.983  62.709  1.00 36.69      A    C
ATOM    115  NZ  LYS A 128     -69.340  54.792  61.791  1.00 36.69      A    N
ATOM    116  N   ASP A 129     -67.983  54.591  67.480  1.00 40.37      A    N
ATOM    117  CA  ASP A 129     -67.551  55.038  68.772  1.00 40.37      A    C
ATOM    118  C   ASP A 129     -67.610  56.527  68.787  1.00 40.37      A    C
ATOM    119  O   ASP A 129     -67.138  57.192  67.864  1.00 40.37      A    O
ATOM    120  CB  ASP A 129     -66.114  54.614  69.119  1.00 40.37      A    C
ATOM    121  CG  ASP A 129     -65.880  54.856  70.605  1.00 40.37      A    C
ATOM    122  OD1 ASP A 129     -66.812  55.368  71.279  1.00 40.37      A    O
ATOM    123  OD2 ASP A 129     -64.763  54.527  71.086  1.00 40.37      A    O
ATOM    124  N   ASP A 130     -68.199  57.082  69.860  1.00 44.03      A    N
ATOM    125  CA  ASP A 130     -68.369  58.495  69.961  1.00 44.03      A    C
ATOM    126  C   ASP A 130     -67.439  59.032  71.002  1.00 44.03      A    C
ATOM    127  O   ASP A 130     -67.393  58.575  72.142  1.00 44.03      A    O
ATOM    128  CB  ASP A 130     -69.807  58.889  70.356  1.00 44.03      A    C
ATOM    129  CG  ASP A 130     -69.991  60.395  70.211  1.00 44.03      A    C
```

Figure 10-3

ATOM	130	OD1	ASP	A	130	-69.152	61.160	70.755	1.00	44.03	A	O
ATOM	131	OD2	ASP	A	130	-70.981	60.799	69.544	1.00	44.03	A	O
ATOM	132	N	SER	A	131	-66.654	60.030	70.568	1.00	47.28	A	N
ATOM	133	CA	SER	A	131	-65.746	60.844	71.316	1.00	47.28	A	C
ATOM	134	C	SER	A	131	-66.020	62.151	70.650	1.00	47.28	A	C
ATOM	135	O	SER	A	131	-67.007	62.234	69.928	1.00	47.28	A	O
ATOM	136	CB	SER	A	131	-64.264	60.514	71.077	1.00	47.28	A	C
ATOM	137	OG	SER	A	131	-63.442	61.369	71.858	1.00	47.28	A	O
ATOM	138	N	ASP	A	132	-65.217	63.208	70.854	1.00	45.71	A	N
ATOM	139	CA	ASP	A	132	-65.513	64.406	70.117	1.00	45.71	A	C
ATOM	140	C	ASP	A	132	-65.344	64.020	68.690	1.00	45.71	A	C
ATOM	141	O	ASP	A	132	-66.030	64.497	67.785	1.00	45.71	A	O
ATOM	142	CB	ASP	A	132	-64.533	65.555	70.411	1.00	45.71	A	C
ATOM	143	CG	ASP	A	132	-65.035	66.801	69.693	1.00	45.71	A	C
ATOM	144	OD1	ASP	A	132	-66.098	66.714	69.022	1.00	45.71	A	O
ATOM	145	OD2	ASP	A	132	-64.363	67.860	69.810	1.00	45.71	A	O
ATOM	146	N	VAL	A	133	-64.401	63.097	68.476	1.00	46.63	A	N
ATOM	147	CA	VAL	A	133	-64.126	62.611	67.173	1.00	46.63	A	C
ATOM	148	C	VAL	A	133	-64.896	61.330	67.071	1.00	46.63	A	C
ATOM	149	O	VAL	A	133	-65.512	60.896	68.043	1.00	46.63	A	O
ATOM	150	CB	VAL	A	133	-62.668	62.346	66.983	1.00	46.63	A	C
ATOM	151	CG1	VAL	A	133	-62.356	60.885	67.353	1.00	46.63	A	C
ATOM	152	CG2	VAL	A	133	-62.270	62.836	65.589	1.00	46.63	A	C
ATOM	153	N	THR	A	134	-64.950	60.726	65.872	1.00	47.14	A	N
ATOM	154	CA	THR	A	134	-65.708	59.519	65.729	1.00	47.14	A	C
ATOM	155	C	THR	A	134	-64.783	58.439	65.258	1.00	47.14	A	C
ATOM	156	O	THR	A	134	-64.023	58.630	64.310	1.00	47.14	A	O
ATOM	157	CB	THR	A	134	-66.810	59.672	64.723	1.00	47.14	A	C
ATOM	158	OG1	THR	A	134	-67.575	58.482	64.643	1.00	47.14	A	O
ATOM	159	CG2	THR	A	134	-66.195	60.013	63.358	1.00	47.14	A	C
ATOM	160	N	GLU	A	135	-64.838	57.261	65.914	1.00	48.66	A	N
ATOM	161	CA	GLU	A	135	-63.955	56.172	65.605	1.00	48.66	A	C
ATOM	162	C	GLU	A	135	-64.796	55.022	65.149	1.00	48.66	A	C
ATOM	163	O	GLU	A	135	-65.884	54.800	65.678	1.00	48.66	A	O
ATOM	164	CB	GLU	A	135	-63.190	55.716	66.857	1.00	48.66	A	C
ATOM	165	CG	GLU	A	135	-62.253	56.795	67.408	1.00	48.66	A	C
ATOM	166	CD	GLU	A	135	-61.701	56.321	68.746	1.00	48.66	A	C
ATOM	167	OE1	GLU	A	135	-62.047	55.181	69.160	1.00	48.66	A	O
ATOM	168	OE2	GLU	A	135	-60.931	57.095	69.374	1.00	48.66	A	O
ATOM	169	N	VAL	A	136	-64.334	54.240	64.149	1.00	53.13	A	N
ATOM	170	CA	VAL	A	136	-65.221	53.181	63.749	1.00	53.13	A	C
ATOM	171	C	VAL	A	136	-64.807	51.949	64.480	1.00	53.13	A	C
ATOM	172	O	VAL	A	136	-63.633	51.773	64.799	1.00	53.13	A	O
ATOM	173	CB	VAL	A	136	-65.246	52.817	62.298	1.00	53.13	A	C
ATOM	174	CG1	VAL	A	136	-65.281	54.090	61.437	1.00	53.13	A	C
ATOM	175	CG2	VAL	A	136	-64.144	51.802	62.041	1.00	53.13	A	C
ATOM	176	N	MET	A	137	-65.769	51.052	64.774	1.00	54.30	A	N
ATOM	177	CA	MET	A	137	-65.393	49.865	65.476	1.00	54.30	A	C
ATOM	178	C	MET	A	137	-64.767	48.916	64.521	1.00	54.30	A	C
ATOM	179	O	MET	A	137	-65.261	48.684	63.416	1.00	54.30	A	O
ATOM	180	CB	MET	A	137	-66.518	49.175	66.262	1.00	54.30	A	C
ATOM	181	CG	MET	A	137	-66.880	49.980	67.508	1.00	54.30	A	C
ATOM	182	SD	MET	A	137	-67.682	49.026	68.826	1.00	54.30	A	S
ATOM	183	CE	MET	A	137	-66.192	48.081	69.258	1.00	54.30	A	C
ATOM	184	N	TRP	A	138	-63.632	48.334	64.952	1.00	53.49	A	N
ATOM	185	CA	TRP	A	138	-62.884	47.521	64.050	1.00	53.49	A	C
ATOM	186	C	TRP	A	138	-62.997	46.088	64.446	1.00	53.49	A	C
ATOM	187	O	TRP	A	138	-63.148	45.758	65.622	1.00	53.49	A	O
ATOM	188	CB	TRP	A	138	-61.400	47.897	64.033	1.00	53.49	A	C
ATOM	189	CG	TRP	A	138	-61.173	49.329	63.615	1.00	53.49	A	C
ATOM	190	CD1	TRP	A	138	-60.591	50.354	64.301	1.00	53.49	A	C
ATOM	191	CD2	TRP	A	138	-61.558	49.863	62.340	1.00	53.49	A	C
ATOM	192	NE1	TRP	A	138	-60.552	51.484	63.517	1.00	53.49	A	N
ATOM	193	CE2	TRP	A	138	-61.147	51.197	62.306	1.00	53.49	A	C
ATOM	194	CE3	TRP	A	138	-62.178	49.282	61.268	1.00	53.49	A	C
ATOM	195	CZ2	TRP	A	138	-61.340	51.966	61.188	1.00	53.49	A	C

Figure 10-4

ATOM	196	CZ3	TRP	A	138	-62.389	50.070	60.154	1.00	53.49	A	C
ATOM	197	CH2	TRP	A	138	-61.974	51.386	60.109	1.00	53.49	A	C
ATOM	198	N	GLN	A	139	-62.968	45.202	63.432	1.00	49.24	A	N
ATOM	199	CA	GLN	A	139	-63.000	43.788	63.658	1.00	49.24	A	C
ATOM	200	C	GLN	A	139	-61.803	43.244	62.940	1.00	49.24	A	C
ATOM	201	O	GLN	A	139	-61.573	43.568	61.776	1.00	49.24	A	O
ATOM	202	CB	GLN	A	139	-64.247	43.106	63.067	1.00	49.24	A	C
ATOM	203	CG	GLN	A	139	-64.351	41.618	63.404	1.00	49.24	A	C
ATOM	204	CD	GLN	A	139	-64.787	41.501	64.858	1.00	49.24	A	C
ATOM	205	OE1	GLN	A	139	-65.616	42.275	65.334	1.00	49.24	A	O
ATOM	206	NE2	GLN	A	139	-64.211	40.508	65.588	1.00	49.24	A	N
ATOM	207	N	PRO	A	140	-61.010	42.454	63.610	1.00	43.32	A	N
ATOM	208	CA	PRO	A	140	-59.803	41.931	63.027	1.00	43.32	A	C
ATOM	209	C	PRO	A	140	-60.069	41.166	61.769	1.00	43.32	A	C
ATOM	210	O	PRO	A	140	-60.657	40.088	61.854	1.00	43.32	A	O
ATOM	211	CB	PRO	A	140	-59.213	41.014	64.093	1.00	43.32	A	C
ATOM	212	CG	PRO	A	140	-60.469	40.486	64.817	1.00	43.32	A	C
ATOM	213	CD	PRO	A	140	-61.469	41.655	64.733	1.00	43.32	A	C
ATOM	214	N	ALA	A	141	-59.636	41.680	60.599	1.00	38.30	A	N
ATOM	215	CA	ALA	A	141	-59.798	40.914	59.400	1.00	38.30	A	C
ATOM	216	C	ALA	A	141	-58.870	39.747	59.469	1.00	38.30	A	C
ATOM	217	O	ALA	A	141	-59.278	38.605	59.267	1.00	38.30	A	O
ATOM	218	CB	ALA	A	141	-59.465	41.705	58.131	1.00	38.30	A	C
ATOM	219	N	LEU	A	142	-57.590	40.018	59.795	1.00	34.74	A	N
ATOM	220	CA	LEU	A	142	-56.601	38.982	59.895	1.00	34.74	A	C
ATOM	221	C	LEU	A	142	-55.374	39.564	60.518	1.00	34.74	A	C
ATOM	222	O	LEU	A	142	-55.105	40.758	60.396	1.00	34.74	A	O
ATOM	223	CB	LEU	A	142	-56.152	38.387	58.548	1.00	34.74	A	C
ATOM	224	CG	LEU	A	142	-57.205	37.524	57.830	1.00	34.74	A	C
ATOM	225	CD1	LEU	A	142	-56.655	36.980	56.499	1.00	34.74	A	C
ATOM	226	CD2	LEU	A	142	-57.729	36.404	58.742	1.00	34.74	A	C
ATOM	227	N	ARG	A	143	-54.598	38.714	61.218	1.00	32.75	A	N
ATOM	228	CA	ARG	A	143	-53.365	39.136	61.814	1.00	32.75	A	C
ATOM	229	C	ARG	A	143	-52.334	38.129	61.423	1.00	32.75	A	C
ATOM	230	O	ARG	A	143	-52.559	36.928	61.559	1.00	32.75	A	O
ATOM	231	CB	ARG	A	143	-53.430	39.157	63.353	1.00	32.75	A	C
ATOM	232	CG	ARG	A	143	-52.136	39.573	64.054	1.00	32.75	A	C
ATOM	233	CD	ARG	A	143	-52.264	39.578	65.580	1.00	32.75	A	C
ATOM	234	NE	ARG	A	143	-50.934	39.923	66.155	1.00	32.75	A	N
ATOM	235	CZ	ARG	A	143	-50.068	38.930	66.508	1.00	32.75	A	C
ATOM	236	NH1	ARG	A	143	-50.422	37.623	66.334	1.00	32.75	A	N
ATOM	237	NH2	ARG	A	143	-48.849	39.242	67.038	1.00	32.75	A	N
ATOM	238	N	ARG	A	144	-51.179	38.583	60.898	1.00	32.80	A	N
ATOM	239	CA	ARG	A	144	-50.177	37.617	60.557	1.00	32.80	A	C
ATOM	240	C	ARG	A	144	-48.842	38.144	60.976	1.00	32.80	A	C
ATOM	241	O	ARG	A	144	-48.438	39.236	60.578	1.00	32.80	A	O
ATOM	242	CB	ARG	A	144	-50.096	37.315	59.051	1.00	32.80	A	C
ATOM	243	CG	ARG	A	144	-49.059	36.246	58.703	1.00	32.80	A	C
ATOM	244	CD	ARG	A	144	-48.966	35.948	57.206	1.00	32.80	A	C
ATOM	245	NE	ARG	A	144	-48.362	37.146	56.560	1.00	32.80	A	N
ATOM	246	CZ	ARG	A	144	-48.011	37.108	55.241	1.00	32.80	A	C
ATOM	247	NH1	ARG	A	144	-48.215	35.972	54.512	1.00	32.80	A	N
ATOM	248	NH2	ARG	A	144	-47.456	38.207	54.653	1.00	32.80	A	N
ATOM	249	N	GLY	A	145	-48.100	37.353	61.778	1.00	35.33	A	N
ATOM	250	CA	GLY	A	145	-46.790	37.765	62.194	1.00	35.33	A	C
ATOM	251	C	GLY	A	145	-46.850	38.295	63.594	1.00	35.33	A	C
ATOM	252	O	GLY	A	145	-47.926	38.565	64.125	1.00	35.33	A	O
ATOM	253	N	ARG	A	146	-45.665	38.389	64.239	1.00	39.72	A	N
ATOM	254	CA	ARG	A	146	-45.494	38.851	65.590	1.00	39.72	A	C
ATOM	255	C	ARG	A	146	-45.766	40.318	65.743	1.00	39.72	A	C
ATOM	256	O	ARG	A	146	-46.526	40.725	66.619	1.00	39.72	A	O
ATOM	257	CB	ARG	A	146	-44.068	38.611	66.115	1.00	39.72	A	C
ATOM	258	CG	ARG	A	146	-42.993	39.316	65.286	1.00	39.72	A	C
ATOM	259	CD	ARG	A	146	-41.570	39.083	65.798	1.00	39.72	A	C
ATOM	260	NE	ARG	A	146	-40.641	39.810	64.889	1.00	39.72	A	N
ATOM	261	CZ	ARG	A	146	-40.149	39.188	63.779	1.00	39.72	A	C

Figure 10-5

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ATOM  262  NH1 ARG A 146     -40.509  37.900  63.501  1.00 39.72      A    N
ATOM  263  NH2 ARG A 146     -39.297  39.851  62.944  1.00 39.72      A    N
ATOM  264  N   GLY A 147     -45.172  41.162  64.879  1.00 44.41      A    N
ATOM  265  CA  GLY A 147     -45.351  42.573  65.044  1.00 44.41      A    C
ATOM  266  C   GLY A 147     -46.762  42.865  64.661  1.00 44.41      A    C
ATOM  267  O   GLY A 147     -47.393  42.060  63.979  1.00 44.41      A    O
ATOM  268  N   LEU A 148     -47.247  44.078  64.995  1.00 47.49      A    N
ATOM  269  CA  LEU A 148     -48.597  44.456  64.675  1.00 47.49      A    C
ATOM  270  C   LEU A 148     -49.629  43.503  65.207  1.00 47.49      A    C
ATOM  271  O   LEU A 148     -49.786  42.379  64.735  1.00 47.49      A    O
ATOM  272  CB  LEU A 148     -48.863  44.507  63.160  1.00 47.49      A    C
ATOM  273  CG  LEU A 148     -47.914  45.410  62.360  1.00 47.49      A    C
ATOM  274  CD1 LEU A 148     -46.476  44.873  62.404  1.00 47.49      A    C
ATOM  275  CD2 LEU A 148     -48.417  45.599  60.922  1.00 47.49      A    C
ATOM  276  N   GLN A 149     -50.303  43.926  66.297  1.00 46.88      A    N
ATOM  277  CA  GLN A 149     -51.399  43.181  66.850  1.00 46.88      A    C
ATOM  278  C   GLN A 149     -52.453  44.195  67.199  1.00 46.88      A    C
ATOM  279  O   GLN A 149     -52.152  45.381  67.326  1.00 46.88      A    O
ATOM  280  CB  GLN A 149     -50.990  42.424  68.122  1.00 46.88      A    C
ATOM  281  CG  GLN A 149     -52.028  41.425  68.620  1.00 46.88      A    C
ATOM  282  CD  GLN A 149     -51.406  40.683  69.791  1.00 46.88      A    C
ATOM  283  OE1 GLN A 149     -50.243  40.903  70.126  1.00 46.88      A    O
ATOM  284  NE2 GLN A 149     -52.195  39.776  70.428  1.00 46.88      A    N
ATOM  285  N   ALA A 150     -53.728  43.774  67.336  1.00 45.60      A    N
ATOM  286  CA  ALA A 150     -54.758  44.729  67.640  1.00 45.60      A    C
ATOM  287  C   ALA A 150     -54.772  44.965  69.115  1.00 45.60      A    C
ATOM  288  O   ALA A 150     -54.794  44.029  69.914  1.00 45.60      A    O
ATOM  289  CB  ALA A 150     -56.167  44.273  67.224  1.00 45.60      A    C
ATOM  290  N   GLN A 151     -54.787  46.252  69.510  1.00 44.75      A    N
ATOM  291  CA  GLN A 151     -54.793  46.614  70.894  1.00 44.75      A    C
ATOM  292  C   GLN A 151     -56.207  46.945  71.219  1.00 44.75      A    C
ATOM  293  O   GLN A 151     -57.085  46.087  71.139  1.00 44.75      A    O
ATOM  294  CB  GLN A 151     -53.925  47.843  71.215  1.00 44.75      A    C
ATOM  295  CG  GLN A 151     -53.862  48.152  72.712  1.00 44.75      A    C
ATOM  296  CD  GLN A 151     -52.977  49.373  72.912  1.00 44.75      A    C
ATOM  297  OE1 GLN A 151     -53.312  50.274  73.679  1.00 44.75      A    O
ATOM  298  NE2 GLN A 151     -51.808  49.400  72.218  1.00 44.75      A    N
ATOM  299  N   GLY A 152     -56.473  48.196  71.630  1.00 44.25      A    N
ATOM  300  CA  GLY A 152     -57.839  48.508  71.905  1.00 44.25      A    C
ATOM  301  C   GLY A 152     -58.343  49.345  70.778  1.00 44.25      A    C
ATOM  302  O   GLY A 152     -58.248  50.572  70.814  1.00 44.25      A    O
ATOM  303  N   TYR A 153     -58.933  48.693  69.755  1.00 46.47      A    N
ATOM  304  CA  TYR A 153     -59.487  49.431  68.656  1.00 46.47      A    C
ATOM  305  C   TYR A 153     -58.384  50.041  67.811  1.00 46.47      A    C
ATOM  306  O   TYR A 153     -58.629  50.663  66.777  1.00 46.47      A    O
ATOM  307  CB  TYR A 153     -60.474  50.505  69.220  1.00 46.47      A    C
ATOM  308  CG  TYR A 153     -60.626  51.644  68.276  1.00 46.47      A    C
ATOM  309  CD1 TYR A 153     -61.496  51.609  67.211  1.00 46.47      A    C
ATOM  310  CD2 TYR A 153     -59.825  52.748  68.455  1.00 46.47      A    C
ATOM  311  CE1 TYR A 153     -61.566  52.681  66.351  1.00 46.47      A    C
ATOM  312  CE2 TYR A 153     -59.892  53.818  67.599  1.00 46.47      A    C
ATOM  313  CZ  TYR A 153     -60.767  53.782  66.543  1.00 46.47      A    C
ATOM  314  OH  TYR A 153     -60.835  54.876  65.658  1.00 46.47      A    O
ATOM  315  N   GLY A 154     -57.107  49.787  68.144  1.00 48.14      A    N
ATOM  316  CA  GLY A 154     -56.096  50.424  67.348  1.00 48.14      A    C
ATOM  317  C   GLY A 154     -55.027  49.423  67.053  1.00 48.14      A    C
ATOM  318  O   GLY A 154     -54.970  48.362  67.672  1.00 48.14      A    O
ATOM  319  N   VAL A 155     -54.127  49.737  66.093  1.00 50.13      A    N
ATOM  320  CA  VAL A 155     -53.130  48.751  65.810  1.00 50.13      A    C
ATOM  321  C   VAL A 155     -51.918  49.084  66.623  1.00 50.13      A    C
ATOM  322  O   VAL A 155     -51.486  50.236  66.683  1.00 50.13      A    O
ATOM  323  CB  VAL A 155     -52.715  48.651  64.374  1.00 50.13      A    C
ATOM  324  CG1 VAL A 155     -51.647  47.544  64.297  1.00 50.13      A    C
ATOM  325  CG2 VAL A 155     -53.957  48.390  63.502  1.00 50.13      A    C
ATOM  326  N   ARG A 156     -51.337  48.061  67.279  1.00 52.84      A    N
ATOM  327  CA  ARG A 156     -50.204  48.293  68.126  1.00 52.84      A    C
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Figure 10-6

ATOM	328	C	ARG	A	156	-48.988	47.743	67.451	1.00	52.84	A C
ATOM	329	O	ARG	A	156	-49.003	46.616	66.959	1.00	52.84	A O
ATOM	330	CB	ARG	A	156	-50.301	47.586	69.490	1.00	52.84	A C
ATOM	331	CG	ARG	A	156	-50.386	46.062	69.378	1.00	52.84	A C
ATOM	332	CD	ARG	A	156	-50.368	45.335	70.724	1.00	52.84	A C
ATOM	333	NE	ARG	A	156	-51.713	45.490	71.345	1.00	52.84	A N
ATOM	334	CZ	ARG	A	156	-52.068	44.697	72.399	1.00	52.84	A C
ATOM	335	NH1	ARG	A	156	-51.193	43.767	72.879	1.00	52.84	A N
ATOM	336	NH2	ARG	A	156	-53.300	44.833	72.971	1.00	52.84	A N
ATOM	337	N	ILE	A	157	-47.880	48.517	67.414	1.00	52.18	A N
ATOM	338	CA	ILE	A	157	-46.732	47.932	66.783	1.00	52.18	A C
ATOM	339	C	ILE	A	157	-45.795	47.361	67.795	1.00	52.18	A C
ATOM	340	O	ILE	A	157	-45.358	48.022	68.733	1.00	52.18	A O
ATOM	341	CB	ILE	A	157	-45.982	48.748	65.756	1.00	52.18	A C
ATOM	342	CG1	ILE	A	157	-45.486	50.091	66.291	1.00	52.18	A C
ATOM	343	CG2	ILE	A	157	-46.899	48.886	64.531	1.00	52.18	A C
ATOM	344	CD1	ILE	A	157	-46.617	51.104	66.374	1.00	52.18	A C
ATOM	345	N	GLN	A	158	-45.583	46.036	67.654	1.00	47.14	A N
ATOM	346	CA	GLN	A	158	-44.735	45.198	68.453	1.00	47.14	A C
ATOM	347	C	GLN	A	158	-43.279	45.375	68.136	1.00	47.14	A C
ATOM	348	O	GLN	A	158	-42.439	45.299	69.029	1.00	47.14	A O
ATOM	349	CB	GLN	A	158	-45.054	43.705	68.263	1.00	47.14	A C
ATOM	350	CG	GLN	A	158	-46.448	43.306	68.751	1.00	47.14	A C
ATOM	351	CD	GLN	A	158	-46.432	43.316	70.273	1.00	47.14	A C
ATOM	352	OE1	GLN	A	158	-47.463	43.140	70.920	1.00	47.14	A O
ATOM	353	NE2	GLN	A	158	-45.225	43.526	70.864	1.00	47.14	A N
ATOM	354	N	ASP	A	159	-42.928	45.560	66.847	1.00	40.20	A N
ATOM	355	CA	ASP	A	159	-41.534	45.650	66.510	1.00	40.20	A C
ATOM	356	C	ASP	A	159	-41.301	46.883	65.697	1.00	40.20	A C
ATOM	357	O	ASP	A	159	-41.944	47.098	64.671	1.00	40.20	A O
ATOM	358	CB	ASP	A	159	-41.025	44.438	65.709	1.00	40.20	A C
ATOM	359	CG	ASP	A	159	-41.794	44.373	64.402	1.00	40.20	A C
ATOM	360	OD1	ASP	A	159	-43.043	44.547	64.433	1.00	40.20	A O
ATOM	361	OD2	ASP	A	159	-41.133	44.149	63.353	1.00	40.20	A O
ATOM	362	N	ALA	A	160	-40.346	47.728	66.132	1.00	33.14	A N
ATOM	363	CA	ALA	A	160	-40.086	48.950	65.429	1.00	33.14	A C
ATOM	364	C	ALA	A	160	-39.569	48.602	64.070	1.00	33.14	A C
ATOM	365	O	ALA	A	160	-38.861	47.611	63.896	1.00	33.14	A O
ATOM	366	CB	ALA	A	160	-39.037	49.846	66.112	1.00	33.14	A C
ATOM	367	N	GLY	A	161	-39.929	49.421	63.058	1.00	29.02	A N
ATOM	368	CA	GLY	A	161	-39.492	49.156	61.719	1.00	29.02	A C
ATOM	369	C	GLY	A	161	-40.256	50.058	60.798	1.00	29.02	A C
ATOM	370	O	GLY	A	161	-40.894	51.014	61.236	1.00	29.02	A O
ATOM	371	N	VAL	A	162	-40.203	49.767	59.482	1.00	31.57	A N
ATOM	372	CA	VAL	A	162	-40.875	50.582	58.508	1.00	31.57	A C
ATOM	373	C	VAL	A	162	-42.173	49.920	58.169	1.00	31.57	A C
ATOM	374	O	VAL	A	162	-42.237	48.704	58.006	1.00	31.57	A O
ATOM	375	CB	VAL	A	162	-40.104	50.723	57.231	1.00	31.57	A C
ATOM	376	CG1	VAL	A	162	-39.937	49.323	56.616	1.00	31.57	A C
ATOM	377	CG2	VAL	A	162	-40.842	51.717	56.319	1.00	31.57	A C
ATOM	378	N	TYR	A	163	-43.257	50.718	58.069	1.00	36.28	A N
ATOM	379	CA	TYR	A	163	-44.541	50.145	57.791	1.00	36.28	A C
ATOM	380	C	TYR	A	163	-45.242	50.903	56.709	1.00	36.28	A C
ATOM	381	O	TYR	A	163	-45.133	52.124	56.601	1.00	36.28	A O
ATOM	382	CB	TYR	A	163	-45.503	50.195	58.985	1.00	36.28	A C
ATOM	383	CG	TYR	A	163	-45.015	49.250	60.017	1.00	36.28	A C
ATOM	384	CD1	TYR	A	163	-44.005	49.598	60.886	1.00	36.28	A C
ATOM	385	CD2	TYR	A	163	-45.587	48.007	60.108	1.00	36.28	A C
ATOM	386	CE1	TYR	A	163	-43.569	48.708	61.839	1.00	36.28	A C
ATOM	387	CE2	TYR	A	163	-45.154	47.121	61.056	1.00	36.28	A C
ATOM	388	CZ	TYR	A	163	-44.145	47.464	61.920	1.00	36.28	A C
ATOM	389	OH	TYR	A	163	-43.717	46.533	62.887	1.00	36.28	A O
ATOM	390	N	LEU	A	164	-45.994	50.160	55.871	1.00	39.72	A N
ATOM	391	CA	LEU	A	164	-46.849	50.772	54.899	1.00	39.72	A C
ATOM	392	C	LEU	A	164	-48.186	50.775	55.567	1.00	39.72	A C
ATOM	393	O	LEU	A	164	-48.692	49.727	55.965	1.00	39.72	A O

Figure 10-7

ATOM	394	CB	LEU	A	164	-46.966	49.978	53.585	1.00	39.72	A C
ATOM	395	CG	LEU	A	164	-47.909	50.603	52.538	1.00	39.72	A C
ATOM	396	CD1	LEU	A	164	-47.390	51.964	52.050	1.00	39.72	A C
ATOM	397	CD2	LEU	A	164	-48.193	49.620	51.388	1.00	39.72	A C
ATOM	398	N	LEU	A	165	-48.774	51.972	55.732	1.00	44.09	A N
ATOM	399	CA	LEU	A	165	-50.011	52.138	56.441	1.00	44.09	A C
ATOM	400	C	LEU	A	165	-51.054	52.670	55.514	1.00	44.09	A C
ATOM	401	O	LEU	A	165	-50.818	53.644	54.801	1.00	44.09	A O
ATOM	402	CB	LEU	A	165	-49.844	53.160	57.578	1.00	44.09	A C
ATOM	403	CG	LEU	A	165	-51.142	53.700	58.199	1.00	44.09	A C
ATOM	404	CD1	LEU	A	165	-52.063	52.592	58.728	1.00	44.09	A C
ATOM	405	CD2	LEU	A	165	-50.799	54.767	59.253	1.00	44.09	A C
ATOM	406	N	TYR	A	166	-52.240	52.027	55.480	1.00	45.50	A N
ATOM	407	CA	TYR	A	166	-53.294	52.573	54.676	1.00	45.50	A C
ATOM	408	C	TYR	A	166	-54.613	52.462	55.377	1.00	45.50	A C
ATOM	409	O	TYR	A	166	-54.823	51.586	56.215	1.00	45.50	A O
ATOM	410	CB	TYR	A	166	-53.395	52.018	53.237	1.00	45.50	A C
ATOM	411	CG	TYR	A	166	-53.411	50.528	53.213	1.00	45.50	A C
ATOM	412	CD1	TYR	A	166	-52.223	49.835	53.245	1.00	45.50	A C
ATOM	413	CD2	TYR	A	166	-54.591	49.828	53.131	1.00	45.50	A C
ATOM	414	CE1	TYR	A	166	-52.210	48.462	53.212	1.00	45.50	A C
ATOM	415	CE2	TYR	A	166	-54.584	48.453	53.097	1.00	45.50	A C
ATOM	416	CZ	TYR	A	166	-53.393	47.768	53.138	1.00	45.50	A C
ATOM	417	OH	TYR	A	166	-53.384	46.359	53.103	1.00	45.50	A O
ATOM	418	N	SER	A	167	-55.531	53.407	55.071	1.00	46.49	A N
ATOM	419	CA	SER	A	167	-56.829	53.391	55.685	1.00	46.49	A C
ATOM	420	C	SER	A	167	-57.821	53.992	54.738	1.00	46.49	A C
ATOM	421	O	SER	A	167	-57.527	54.965	54.043	1.00	46.49	A O
ATOM	422	CB	SER	A	167	-56.906	54.211	56.984	1.00	46.49	A C
ATOM	423	OG	SER	A	167	-56.713	55.589	56.702	1.00	46.49	A O
ATOM	424	N	GLN	A	168	-59.042	53.418	54.705	1.00	49.22	A N
ATOM	425	CA	GLN	A	168	-60.055	53.918	53.823	1.00	49.22	A C
ATOM	426	C	GLN	A	168	-61.369	53.855	54.536	1.00	49.22	A C
ATOM	427	O	GLN	A	168	-61.636	52.924	55.298	1.00	49.22	A O
ATOM	428	CB	GLN	A	168	-60.179	53.078	52.545	1.00	49.22	A C
ATOM	429	CG	GLN	A	168	-61.239	53.562	51.557	1.00	49.22	A C
ATOM	430	CD	GLN	A	168	-61.200	52.601	50.378	1.00	49.22	A C
ATOM	431	OE1	GLN	A	168	-61.542	51.430	50.520	1.00	49.22	A O
ATOM	432	NE2	GLN	A	168	-60.757	53.094	49.191	1.00	49.22	A N
ATOM	433	N	VAL	A	169	-62.228	54.868	54.310	1.00	51.74	A N
ATOM	434	CA	VAL	A	169	-63.523	54.897	54.927	1.00	51.74	A C
ATOM	435	C	VAL	A	169	-64.492	55.465	53.938	1.00	51.74	A C
ATOM	436	O	VAL	A	169	-64.160	56.374	53.180	1.00	51.74	A O
ATOM	437	CB	VAL	A	169	-63.545	55.760	56.151	1.00	51.74	A C
ATOM	438	CG1	VAL	A	169	-62.867	57.091	55.794	1.00	51.74	A C
ATOM	439	CG2	VAL	A	169	-65.001	55.925	56.620	1.00	51.74	A C
ATOM	440	N	LEU	A	170	-65.733	54.937	53.928	1.00	56.37	A N
ATOM	441	CA	LEU	A	170	-66.715	55.401	52.992	1.00	56.37	A C
ATOM	442	C	LEU	A	170	-67.556	56.412	53.710	1.00	56.37	A C
ATOM	443	O	LEU	A	170	-68.226	56.093	54.691	1.00	56.37	A O
ATOM	444	CB	LEU	A	170	-67.630	54.264	52.496	1.00	56.37	A C
ATOM	445	CG	LEU	A	170	-68.587	54.629	51.341	1.00	56.37	A C
ATOM	446	CD1	LEU	A	170	-69.633	55.672	51.756	1.00	56.37	A C
ATOM	447	CD2	LEU	A	170	-67.810	55.024	50.076	1.00	56.37	A C
ATOM	448	N	PHE	A	171	-67.551	57.670	53.225	1.00	60.65	A N
ATOM	449	CA	PHE	A	171	-68.284	58.704	53.896	1.00	60.65	A C
ATOM	450	C	PHE	A	171	-69.641	58.842	53.269	1.00	60.65	A C
ATOM	451	O	PHE	A	171	-69.767	59.102	52.073	1.00	60.65	A O
ATOM	452	CB	PHE	A	171	-67.606	60.081	53.822	1.00	60.65	A C
ATOM	453	CG	PHE	A	171	-66.313	59.994	54.557	1.00	60.65	A C
ATOM	454	CD1	PHE	A	171	-66.290	60.007	55.932	1.00	60.65	A C
ATOM	455	CD2	PHE	A	171	-65.124	59.911	53.871	1.00	60.65	A C
ATOM	456	CE1	PHE	A	171	-65.098	59.930	56.613	1.00	60.65	A C
ATOM	457	CE2	PHE	A	171	-63.929	59.835	54.546	1.00	60.65	A C
ATOM	458	CZ	PHE	A	171	-63.916	59.845	55.920	1.00	60.65	A C
ATOM	459	N	GLN	A	172	-70.686	58.543	54.071	1.00	67.06	A N

Figure 10-8

ATOM	460	CA	GLN	A	172	-72.085	58.696	53.763	1.00	67.06	A	C
ATOM	461	C	GLN	A	172	-72.577	60.085	54.060	1.00	67.06	A	C
ATOM	462	O	GLN	A	172	-73.676	60.444	53.651	1.00	67.06	A	O
ATOM	463	CB	GLN	A	172	-73.011	57.691	54.479	1.00	67.06	A	C
ATOM	464	CG	GLN	A	172	-73.133	57.873	55.989	1.00	67.06	A	C
ATOM	465	CD	GLN	A	172	-74.078	56.804	56.516	1.00	67.06	A	C
ATOM	466	OE1	GLN	A	172	-74.296	55.778	55.873	1.00	67.06	A	O
ATOM	467	NE2	GLN	A	172	-74.657	57.047	57.722	1.00	67.06	A	N
ATOM	468	N	ASP	A	173	-71.831	60.848	54.883	1.00	71.27	A	N
ATOM	469	CA	ASP	A	173	-72.210	62.145	55.393	1.00	71.27	A	C
ATOM	470	C	ASP	A	173	-72.310	63.178	54.295	1.00	71.27	A	C
ATOM	471	O	ASP	A	173	-71.551	63.174	53.327	1.00	71.27	A	O
ATOM	472	CB	ASP	A	173	-71.190	62.648	56.439	1.00	71.27	A	C
ATOM	473	CG	ASP	A	173	-71.769	63.748	57.323	1.00	71.27	A	C
ATOM	474	OD1	ASP	A	173	-72.416	64.690	56.797	1.00	71.27	A	O
ATOM	475	OD2	ASP	A	173	-71.547	63.665	58.560	1.00	71.27	A	O
ATOM	476	N	VAL	A	174	-73.322	64.062	54.434	1.00	71.57	A	N
ATOM	477	CA	VAL	A	174	-73.705	65.181	53.609	1.00	71.57	A	C
ATOM	478	C	VAL	A	174	-72.799	66.376	53.773	1.00	71.57	A	C
ATOM	479	O	VAL	A	174	-72.741	67.226	52.886	1.00	71.57	A	O
ATOM	480	CB	VAL	A	174	-75.104	65.623	53.919	1.00	71.57	A	C
ATOM	481	CG1	VAL	A	174	-75.449	66.881	53.105	1.00	71.57	A	C
ATOM	482	CG2	VAL	A	174	-76.037	64.433	53.651	1.00	71.57	A	C
ATOM	483	N	THR	A	175	-72.105	66.496	54.924	1.00	70.41	A	N
ATOM	484	CA	THR	A	175	-71.305	67.635	55.302	1.00	70.41	A	C
ATOM	485	C	THR	A	175	-70.461	68.063	54.146	1.00	70.41	A	C
ATOM	486	O	THR	A	175	-70.141	67.272	53.263	1.00	70.41	A	O
ATOM	487	CB	THR	A	175	-70.332	67.311	56.395	1.00	70.41	A	C
ATOM	488	OG1	THR	A	175	-70.999	66.731	57.498	1.00	70.41	A	O
ATOM	489	CG2	THR	A	175	-69.662	68.606	56.853	1.00	70.41	A	C
ATOM	490	N	PHE	A	176	-70.046	69.346	54.153	1.00	61.11	A	N
ATOM	491	CA	PHE	A	176	-69.319	69.888	53.048	1.00	61.11	A	C
ATOM	492	C	PHE	A	176	-68.107	69.050	52.806	1.00	61.11	A	C
ATOM	493	O	PHE	A	176	-67.825	68.701	51.661	1.00	61.11	A	O
ATOM	494	CB	PHE	A	176	-68.896	71.352	53.268	1.00	61.11	A	C
ATOM	495	CG	PHE	A	176	-68.081	71.438	54.511	1.00	61.11	A	C
ATOM	496	CD1	PHE	A	176	-68.693	71.557	55.737	1.00	61.11	A	C
ATOM	497	CD2	PHE	A	176	-66.709	71.405	54.452	1.00	61.11	A	C
ATOM	498	CE1	PHE	A	176	-67.948	71.641	56.890	1.00	61.11	A	C
ATOM	499	CE2	PHE	A	176	-65.959	71.490	55.601	1.00	61.11	A	C
ATOM	500	CZ	PHE	A	176	-66.576	71.608	56.823	1.00	61.11	A	C
ATOM	501	N	THR	A	177	-67.347	68.692	53.857	1.00	51.28	A	N
ATOM	502	CA	THR	A	177	-66.219	67.847	53.584	1.00	51.28	A	C
ATOM	503	C	THR	A	177	-66.088	66.834	54.678	1.00	51.28	A	C
ATOM	504	O	THR	A	177	-66.461	67.082	55.823	1.00	51.28	A	O
ATOM	505	CB	THR	A	177	-64.913	68.579	53.517	1.00	51.28	A	C
ATOM	506	OG1	THR	A	177	-63.908	67.737	52.970	1.00	51.28	A	O
ATOM	507	CG2	THR	A	177	-64.517	69.006	54.940	1.00	51.28	A	C
ATOM	508	N	MET	A	178	-65.539	65.651	54.336	1.00	42.34	A	N
ATOM	509	CA	MET	A	178	-65.347	64.618	55.315	1.00	42.34	A	C
ATOM	510	C	MET	A	178	-63.980	64.047	55.093	1.00	42.34	A	C
ATOM	511	O	MET	A	178	-63.372	64.271	54.049	1.00	42.34	A	O
ATOM	512	CB	MET	A	178	-66.360	63.465	55.202	1.00	42.34	A	C
ATOM	513	CG	MET	A	178	-67.793	63.883	55.536	1.00	42.34	A	C
ATOM	514	SD	MET	A	178	-68.053	64.361	57.270	1.00	42.34	A	S
ATOM	515	CE	MET	A	178	-68.061	62.664	57.913	1.00	42.34	A	C
ATOM	516	N	GLY	A	179	-63.441	63.311	56.088	1.00	35.34	A	N
ATOM	517	CA	GLY	A	179	-62.135	62.741	55.919	1.00	35.34	A	C
ATOM	518	C	GLY	A	179	-61.706	62.118	57.210	1.00	35.34	A	C
ATOM	519	O	GLY	A	179	-62.377	62.246	58.234	1.00	35.34	A	O
ATOM	520	N	GLN	A	180	-60.550	61.419	57.188	1.00	34.51	A	N
ATOM	521	CA	GLN	A	180	-60.092	60.761	58.377	1.00	34.51	A	C
ATOM	522	C	GLN	A	180	-58.629	61.004	58.536	1.00	34.51	A	C
ATOM	523	O	GLN	A	180	-57.944	61.438	57.611	1.00	34.51	A	O
ATOM	524	CB	GLN	A	180	-60.310	59.239	58.336	1.00	34.51	A	C
ATOM	525	CG	GLN	A	180	-59.516	58.541	57.230	1.00	34.51	A	C

Figure 10-9

ATOM	526	CD	GLN	A	180	-59.901	57.069	57.228	1.00	34.51	A	C
ATOM	527	OE1	GLN	A	180	-59.336	56.265	56.489	1.00	34.51	A	O
ATOM	528	NE2	GLN	A	180	-60.898	56.703	58.079	1.00	34.51	A	N
ATOM	529	N	VAL	A	181	-58.118	60.752	59.755	1.00	37.80	A	N
ATOM	530	CA	VAL	A	181	-56.721	60.936	59.992	1.00	37.80	A	C
ATOM	531	C	VAL	A	181	-56.168	59.635	60.463	1.00	37.80	A	C
ATOM	532	O	VAL	A	181	-56.742	58.977	61.331	1.00	37.80	A	O
ATOM	533	CB	VAL	A	181	-56.426	61.958	61.050	1.00	37.80	A	C
ATOM	534	CG1	VAL	A	181	-56.936	63.326	60.563	1.00	37.80	A	C
ATOM	535	CG2	VAL	A	181	-57.064	61.497	62.372	1.00	37.80	A	C
ATOM	536	N	VAL	A	182	-55.041	59.205	59.866	1.00	42.17	A	N
ATOM	537	CA	VAL	A	182	-54.415	58.036	60.394	1.00	42.17	A	C
ATOM	538	C	VAL	A	182	-53.353	58.594	61.282	1.00	42.17	A	C
ATOM	539	O	VAL	A	182	-52.419	59.255	60.832	1.00	42.17	A	O
ATOM	540	CB	VAL	A	182	-53.842	57.103	59.360	1.00	42.17	A	C
ATOM	541	CG1	VAL	A	182	-52.728	57.789	58.549	1.00	42.17	A	C
ATOM	542	CG2	VAL	A	182	-53.414	55.825	60.096	1.00	42.17	A	C
ATOM	543	N	SER	A	183	-53.483	58.359	62.599	1.00	45.27	A	N
ATOM	544	CA	SER	A	183	-52.582	59.026	63.488	1.00	45.27	A	C
ATOM	545	C	SER	A	183	-51.744	58.040	64.226	1.00	45.27	A	C
ATOM	546	O	SER	A	183	-52.049	56.848	64.279	1.00	45.27	A	O
ATOM	547	CB	SER	A	183	-53.298	59.891	64.540	1.00	45.27	A	C
ATOM	548	OG	SER	A	183	-54.012	60.941	63.905	1.00	45.27	A	O
ATOM	549	N	ARG	A	184	-50.623	58.530	64.797	1.00	48.52	A	N
ATOM	550	CA	ARG	A	184	-49.801	57.647	65.561	1.00	48.52	A	C
ATOM	551	C	ARG	A	184	-49.769	58.116	66.974	1.00	48.52	A	C
ATOM	552	O	ARG	A	184	-49.520	59.288	67.254	1.00	48.52	A	O
ATOM	553	CB	ARG	A	184	-48.336	57.528	65.098	1.00	48.52	A	C
ATOM	554	CG	ARG	A	184	-47.509	58.807	65.196	1.00	48.52	A	C
ATOM	555	CD	ARG	A	184	-46.122	58.664	64.568	1.00	48.52	A	C
ATOM	556	NE	ARG	A	184	-45.299	57.784	65.445	1.00	48.52	A	N
ATOM	557	CZ	ARG	A	184	-44.491	58.351	66.387	1.00	48.52	A	C
ATOM	558	NH1	ARG	A	184	-44.487	59.706	66.548	1.00	48.52	A	N
ATOM	559	NH2	ARG	A	184	-43.682	57.570	67.160	1.00	48.52	A	N
ATOM	560	N	GLU	A	185	-50.049	57.189	67.909	1.00	48.59	A	N
ATOM	561	CA	GLU	A	185	-49.922	57.513	69.296	1.00	48.59	A	C
ATOM	562	C	GLU	A	185	-48.552	57.054	69.628	1.00	48.59	A	C
ATOM	563	O	GLU	A	185	-48.287	55.856	69.727	1.00	48.59	A	O
ATOM	564	CB	GLU	A	185	-50.901	56.756	70.211	1.00	48.59	A	C
ATOM	565	CG	GLU	A	185	-52.360	57.168	70.011	1.00	48.59	A	C
ATOM	566	CD	GLU	A	185	-52.505	58.614	70.464	1.00	48.59	A	C
ATOM	567	OE1	GLU	A	185	-51.476	59.209	70.882	1.00	48.59	A	O
ATOM	568	OE2	GLU	A	185	-53.645	59.145	70.394	1.00	48.59	A	O
ATOM	569	N	GLY	A	186	-47.631	58.011	69.803	1.00	50.68	A	N
ATOM	570	CA	GLY	A	186	-46.283	57.600	69.996	1.00	50.68	A	C
ATOM	571	C	GLY	A	186	-46.060	57.251	71.415	1.00	50.68	A	C
ATOM	572	O	GLY	A	186	-46.830	57.601	72.310	1.00	50.68	A	O
ATOM	573	N	GLN	A	187	-44.917	56.574	71.635	1.00	55.20	A	N
ATOM	574	CA	GLN	A	187	-44.443	56.358	72.959	1.00	55.20	A	C
ATOM	575	C	GLN	A	187	-44.219	57.770	73.378	1.00	55.20	A	C
ATOM	576	O	GLN	A	187	-44.403	58.139	74.536	1.00	55.20	A	O
ATOM	577	CB	GLN	A	187	-43.091	55.625	73.020	1.00	55.20	A	C
ATOM	578	CG	GLN	A	187	-41.930	56.411	72.406	1.00	55.20	A	C
ATOM	579	CD	GLN	A	187	-42.076	56.370	70.893	1.00	55.20	A	C
ATOM	580	OE1	GLN	A	187	-42.127	55.298	70.292	1.00	55.20	A	O
ATOM	581	NE2	GLN	A	187	-42.148	57.569	70.255	1.00	55.20	A	N
ATOM	582	N	GLY	A	188	-43.821	58.588	72.378	1.00	56.44	A	N
ATOM	583	CA	GLY	A	188	-43.699	60.008	72.471	1.00	56.44	A	C
ATOM	584	C	GLY	A	188	-45.088	60.564	72.235	1.00	56.44	A	C
ATOM	585	O	GLY	A	188	-46.057	60.023	72.760	1.00	56.44	A	O
ATOM	586	N	ARG	A	189	-45.221	61.667	71.455	1.00	56.19	A	N
ATOM	587	CA	ARG	A	189	-46.482	62.352	71.240	1.00	56.19	A	C
ATOM	588	C	ARG	A	189	-47.274	61.752	70.099	1.00	56.19	A	C
ATOM	589	O	ARG	A	189	-46.808	60.859	69.393	1.00	56.19	A	O
ATOM	590	CB	ARG	A	189	-46.302	63.856	70.957	1.00	56.19	A	C
ATOM	591	CG	ARG	A	189	-47.603	64.663	71.000	1.00	56.19	A	C

Figure 10-10

ATOM	592	CD	ARG	A	189	-47.404	66.165	70.777	1.00	56.19	A	C
ATOM	593	NE	ARG	A	189	-47.210	66.385	69.317	1.00	56.19	A	N
ATOM	594	CZ	ARG	A	189	-48.294	66.559	68.505	1.00	56.19	A	C
ATOM	595	NH1	ARG	A	189	-49.552	66.532	69.031	1.00	56.19	A	N
ATOM	596	NH2	ARG	A	189	-48.117	66.762	67.166	1.00	56.19	A	N
ATOM	597	N	GLN	A	190	-48.538	62.225	69.928	1.00	52.24	A	N
ATOM	598	CA	GLN	A	190	-49.432	61.754	68.898	1.00	52.24	A	C
ATOM	599	C	GLN	A	190	-49.435	62.732	67.766	1.00	52.24	A	C
ATOM	600	O	GLN	A	190	-49.506	63.941	67.968	1.00	52.24	A	O
ATOM	601	CB	GLN	A	190	-50.884	61.571	69.383	1.00	52.24	A	C
ATOM	602	CG	GLN	A	190	-51.585	62.865	69.810	1.00	52.24	A	C
ATOM	603	CD	GLN	A	190	-52.153	63.545	68.571	1.00	52.24	A	C
ATOM	604	OE1	GLN	A	190	-52.017	64.754	68.391	1.00	52.24	A	O
ATOM	605	NE2	GLN	A	190	-52.817	62.747	67.692	1.00	52.24	A	N
ATOM	606	N	GLU	A	191	-49.337	62.213	66.526	1.00	45.63	A	N
ATOM	607	CA	GLU	A	191	-49.342	63.056	65.365	1.00	45.63	A	C
ATOM	608	C	GLU	A	191	-50.093	62.326	64.298	1.00	45.63	A	C
ATOM	609	O	GLU	A	191	-50.303	61.119	64.398	1.00	45.63	A	O
ATOM	610	CB	GLU	A	191	-47.934	63.361	64.827	1.00	45.63	A	C
ATOM	611	CG	GLU	A	191	-47.908	64.395	63.699	1.00	45.63	A	C
ATOM	612	CD	GLU	A	191	-46.457	64.589	63.281	1.00	45.63	A	C
ATOM	613	OE1	GLU	A	191	-45.597	63.794	63.746	1.00	45.63	A	O
ATOM	614	OE2	GLU	A	191	-46.188	65.535	62.494	1.00	45.63	A	O
ATOM	615	N	THR	A	192	-50.532	63.043	63.242	1.00	41.18	A	N
ATOM	616	CA	THR	A	192	-51.269	62.379	62.205	1.00	41.18	A	C
ATOM	617	C	THR	A	192	-50.341	62.159	61.054	1.00	41.18	A	C
ATOM	618	O	THR	A	192	-49.776	63.103	60.505	1.00	41.18	A	O
ATOM	619	CB	THR	A	192	-52.434	63.168	61.680	1.00	41.18	A	C
ATOM	620	OG1	THR	A	192	-51.980	64.341	61.020	1.00	41.18	A	O
ATOM	621	CG2	THR	A	192	-53.344	63.546	62.861	1.00	41.18	A	C
ATOM	622	N	LEU	A	193	-50.125	60.877	60.697	1.00	40.86	A	N
ATOM	623	CA	LEU	A	193	-49.245	60.537	59.617	1.00	40.86	A	C
ATOM	624	C	LEU	A	193	-49.827	60.966	58.306	1.00	40.86	A	C
ATOM	625	O	LEU	A	193	-49.177	61.672	57.536	1.00	40.86	A	O
ATOM	626	CB	LEU	A	193	-48.983	59.024	59.532	1.00	40.86	A	C
ATOM	627	CG	LEU	A	193	-48.245	58.456	60.761	1.00	40.86	A	C
ATOM	628	CD1	LEU	A	193	-49.073	58.626	62.044	1.00	40.86	A	C
ATOM	629	CD2	LEU	A	193	-47.822	56.998	60.532	1.00	40.86	A	C
ATOM	630	N	PHE	A	194	-51.088	60.574	58.027	1.00	41.35	A	N
ATOM	631	CA	PHE	A	194	-51.655	60.904	56.751	1.00	41.35	A	C
ATOM	632	C	PHE	A	194	-53.105	61.202	56.973	1.00	41.35	A	C
ATOM	633	O	PHE	A	194	-53.689	60.764	57.962	1.00	41.35	A	O
ATOM	634	CB	PHE	A	194	-51.599	59.740	55.748	1.00	41.35	A	C
ATOM	635	CG	PHE	A	194	-50.178	59.297	55.655	1.00	41.35	A	C
ATOM	636	CD1	PHE	A	194	-49.290	59.930	54.818	1.00	41.35	A	C
ATOM	637	CD2	PHE	A	194	-49.733	58.249	56.429	1.00	41.35	A	C
ATOM	638	CE1	PHE	A	194	-47.981	59.512	54.745	1.00	41.35	A	C
ATOM	639	CE2	PHE	A	194	-48.426	57.826	56.359	1.00	41.35	A	C
ATOM	640	CZ	PHE	A	194	-47.547	58.461	55.516	1.00	41.35	A	C
ATOM	641	N	ARG	A	195	-53.725	61.969	56.051	1.00	42.11	A	N
ATOM	642	CA	ARG	A	195	-55.116	62.284	56.207	1.00	42.11	A	C
ATOM	643	C	ARG	A	195	-55.767	62.227	54.862	1.00	42.11	A	C
ATOM	644	O	ARG	A	195	-55.106	62.344	53.831	1.00	42.11	A	O
ATOM	645	CB	ARG	A	195	-55.368	63.681	56.800	1.00	42.11	A	C
ATOM	646	CG	ARG	A	195	-54.782	64.827	55.973	1.00	42.11	A	C
ATOM	647	CD	ARG	A	195	-54.965	66.197	56.628	1.00	42.11	A	C
ATOM	648	NE	ARG	A	195	-54.354	67.215	55.726	1.00	42.11	A	N
ATOM	649	CZ	ARG	A	195	-55.098	67.779	54.728	1.00	42.11	A	C
ATOM	650	NH1	ARG	A	195	-56.405	67.423	54.564	1.00	42.11	A	N
ATOM	651	NH2	ARG	A	195	-54.530	68.702	53.896	1.00	42.11	A	N
ATOM	652	N	CYS	A	196	-57.102	62.024	54.847	1.00	42.45	A	N
ATOM	653	CA	CYS	A	196	-57.805	61.932	53.603	1.00	42.45	A	C
ATOM	654	C	CYS	A	196	-58.959	62.887	53.710	1.00	42.45	A	C
ATOM	655	O	CYS	A	196	-59.566	63.013	54.774	1.00	42.45	A	O
ATOM	656	CB	CYS	A	196	-58.338	60.502	53.370	1.00	42.45	A	C
ATOM	657	SG	CYS	A	196	-58.559	60.053	51.623	1.00	42.45	A	S

Figure 10-11

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ATOM    658  N   ILE A 197     -59.263  63.631  52.627  1.00 39.20      A    N
ATOM    659  CA  ILE A 197     -60.360  64.558  52.690  1.00 39.20      A    C
ATOM    660  C   ILE A 197     -61.147  64.455  51.423  1.00 39.20      A    C
ATOM    661  O   ILE A 197     -60.580  64.319  50.340  1.00 39.20      A    O
ATOM    662  CB  ILE A 197     -59.927  65.988  52.826  1.00 39.20      A    C
ATOM    663  CG1 ILE A 197     -61.136  66.888  53.130  1.00 39.20      A    C
ATOM    664  CG2 ILE A 197     -59.168  66.374  51.545  1.00 39.20      A    C
ATOM    665  CD1 ILE A 197     -61.775  66.614  54.491  1.00 39.20      A    C
ATOM    666  N   ARG A 198     -62.492  64.508  51.528  1.00 37.08      A    N
ATOM    667  CA  ARG A 198     -63.288  64.434  50.338  1.00 37.08      A    C
ATOM    668  C   ARG A 198     -64.452  65.363  50.490  1.00 37.08      A    C
ATOM    669  O   ARG A 198     -65.064  65.444  51.554  1.00 37.08      A    O
ATOM    670  CB  ARG A 198     -63.861  63.032  50.072  1.00 37.08      A    C
ATOM    671  CG  ARG A 198     -64.650  62.931  48.766  1.00 37.08      A    C
ATOM    672  CD  ARG A 198     -63.777  63.082  47.518  1.00 37.08      A    C
ATOM    673  NE  ARG A 198     -62.795  61.961  47.522  1.00 37.08      A    N
ATOM    674  CZ  ARG A 198     -61.931  61.806  46.476  1.00 37.08      A    C
ATOM    675  NH1 ARG A 198     -61.971  62.675  45.424  1.00 37.08      A    N
ATOM    676  NH2 ARG A 198     -61.029  60.781  46.482  1.00 37.08      A    N
ATOM    677  N   SER A 199     -64.782  66.104  49.413  1.00 34.75      A    N
ATOM    678  CA  SER A 199     -65.915  66.976  49.475  1.00 34.75      A    C
ATOM    679  C   SER A 199     -67.120  66.108  49.334  1.00 34.75      A    C
ATOM    680  O   SER A 199     -67.082  65.087  48.651  1.00 34.75      A    O
ATOM    681  CB  SER A 199     -65.962  68.023  48.349  1.00 34.75      A    C
ATOM    682  OG  SER A 199     -67.115  68.840  48.491  1.00 34.75      A    O
ATOM    683  N   MET A 200     -68.233  66.504  49.974  1.00 33.48      A    N
ATOM    684  CA  MET A 200     -69.421  65.697  49.928  1.00 33.48      A    C
ATOM    685  C   MET A 200     -70.487  66.493  49.246  1.00 33.48      A    C
ATOM    686  O   MET A 200     -70.574  67.710  49.398  1.00 33.48      A    O
ATOM    687  CB  MET A 200     -69.976  65.335  51.318  1.00 33.48      A    C
ATOM    688  CG  MET A 200     -69.063  64.454  52.180  1.00 33.48      A    C
ATOM    689  SD  MET A 200     -68.863  62.735  51.618  1.00 33.48      A    S
ATOM    690  CE  MET A 200     -67.513  63.070  50.453  1.00 33.48      A    C
ATOM    691  N   PRO A 201     -71.289  65.805  48.480  1.00 34.55      A    N
ATOM    692  CA  PRO A 201     -72.394  66.407  47.783  1.00 34.55      A    C
ATOM    693  C   PRO A 201     -73.514  66.656  48.741  1.00 34.55      A    C
ATOM    694  O   PRO A 201     -73.462  66.153  49.862  1.00 34.55      A    O
ATOM    695  CB  PRO A 201     -72.752  65.447  46.647  1.00 34.55      A    C
ATOM    696  CG  PRO A 201     -72.041  64.130  47.003  1.00 34.55      A    C
ATOM    697  CD  PRO A 201     -70.833  64.588  47.831  1.00 34.55      A    C
ATOM    698  N   SER A 202     -74.543  67.418  48.318  1.00 35.65      A    N
ATOM    699  CA  SER A 202     -75.618  67.747  49.206  1.00 35.65      A    C
ATOM    700  C   SER A 202     -76.203  66.473  49.718  1.00 35.65      A    C
ATOM    701  O   SER A 202     -75.910  65.393  49.209  1.00 35.65      A    O
ATOM    702  CB  SER A 202     -76.750  68.549  48.539  1.00 35.65      A    C
ATOM    703  OG  SER A 202     -77.770  68.830  49.486  1.00 35.65      A    O
ATOM    704  N   HIS A 203     -77.027  66.579  50.780  1.00 37.84      A    N
ATOM    705  CA  HIS A 203     -77.644  65.429  51.377  1.00 37.84      A    C
ATOM    706  C   HIS A 203     -78.502  64.776  50.347  1.00 37.84      A    C
ATOM    707  O   HIS A 203     -78.502  63.551  50.228  1.00 37.84      A    O
ATOM    708  CB  HIS A 203     -78.527  65.769  52.596  1.00 37.84      A    C
ATOM    709  CG  HIS A 203     -79.271  64.584  53.144  1.00 37.84      A    C
ATOM    710  ND1 HIS A 203     -78.774  63.708  54.083  1.00 37.84      A    N
ATOM    711  CD2 HIS A 203     -80.524  64.138  52.850  1.00 37.84      A    C
ATOM    712  CE1 HIS A 203     -79.741  62.784  54.309  1.00 37.84      A    C
ATOM    713  NE2 HIS A 203     -80.823  63.004  53.583  1.00 37.84      A    N
ATOM    714  N   PRO A 204     -79.238  65.537  49.586  1.00 38.77      A    N
ATOM    715  CA  PRO A 204     -80.032  64.926  48.564  1.00 38.77      A    C
ATOM    716  C   PRO A 204     -79.121  64.386  47.518  1.00 38.77      A    C
ATOM    717  O   PRO A 204     -79.576  63.620  46.671  1.00 38.77      A    O
ATOM    718  CB  PRO A 204     -80.984  66.011  48.070  1.00 38.77      A    C
ATOM    719  CG  PRO A 204     -81.158  66.922  49.298  1.00 38.77      A    C
ATOM    720  CD  PRO A 204     -79.836  66.775  50.066  1.00 38.77      A    C
ATOM    721  N   ASP A 205     -77.833  64.776  47.552  1.00 39.11      A    N
ATOM    722  CA  ASP A 205     -76.955  64.343  46.512  1.00 39.11      A    C
ATOM    723  C   ASP A 205     -76.415  62.988  46.819  1.00 39.11      A    C
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Figure 10-12

ATOM	724	O	ASP	A	205	-75.387	62.615	46.255	1.00	39.11	A	O
ATOM	725	CB	ASP	A	205	-75.758	65.285	46.301	1.00	39.11	A	C
ATOM	726	CG	ASP	A	205	-76.273	66.560	45.648	1.00	39.11	A	C
ATOM	727	OD1	ASP	A	205	-77.478	66.593	45.282	1.00	39.11	A	O
ATOM	728	OD2	ASP	A	205	-75.464	67.515	45.499	1.00	39.11	A	O
ATOM	729	N	ARG	A	206	-77.114	62.221	47.689	1.00	38.97	A	N
ATOM	730	CA	ARG	A	206	-76.757	60.865	48.021	1.00	38.97	A	C
ATOM	731	C	ARG	A	206	-75.287	60.788	48.256	1.00	38.97	A	C
ATOM	732	O	ARG	A	206	-74.563	60.186	47.466	1.00	38.97	A	O
ATOM	733	CB	ARG	A	206	-77.121	59.857	46.917	1.00	38.97	A	C
ATOM	734	CG	ARG	A	206	-78.623	59.787	46.634	1.00	38.97	A	C
ATOM	735	CD	ARG	A	206	-79.394	58.882	47.597	1.00	38.97	A	C
ATOM	736	NE	ARG	A	206	-80.826	58.922	47.191	1.00	38.97	A	N
ATOM	737	CZ	ARG	A	206	-81.666	57.900	47.528	1.00	38.97	A	C
ATOM	738	NH1	ARG	A	206	-81.188	56.829	48.227	1.00	38.97	A	N
ATOM	739	NH2	ARG	A	206	-82.980	57.948	47.166	1.00	38.97	A	N
ATOM	740	N	ALA	A	207	-74.795	61.430	49.329	1.00	37.60	A	N
ATOM	741	CA	ALA	A	207	-73.377	61.442	49.518	1.00	37.60	A	C
ATOM	742	C	ALA	A	207	-72.885	60.037	49.632	1.00	37.60	A	C
ATOM	743	O	ALA	A	207	-73.334	59.274	50.485	1.00	37.60	A	O
ATOM	744	CB	ALA	A	207	-72.933	62.200	50.782	1.00	37.60	A	C
ATOM	745	N	TYR	A	208	-71.986	59.646	48.706	1.00	38.50	A	N
ATOM	746	CA	TYR	A	208	-71.309	58.390	48.802	1.00	38.50	A	C
ATOM	747	C	TYR	A	208	-69.925	58.615	48.288	1.00	38.50	A	C
ATOM	748	O	TYR	A	208	-69.720	58.714	47.079	1.00	38.50	A	O
ATOM	749	CB	TYR	A	208	-71.935	57.261	47.960	1.00	38.50	A	C
ATOM	750	CG	TYR	A	208	-73.240	56.887	48.580	1.00	38.50	A	C
ATOM	751	CD1	TYR	A	208	-74.391	57.572	48.271	1.00	38.50	A	C
ATOM	752	CD2	TYR	A	208	-73.311	55.844	49.475	1.00	38.50	A	C
ATOM	753	CE1	TYR	A	208	-75.592	57.228	48.842	1.00	38.50	A	C
ATOM	754	CE2	TYR	A	208	-74.510	55.493	50.051	1.00	38.50	A	C
ATOM	755	CZ	TYR	A	208	-75.653	56.186	49.734	1.00	38.50	A	C
ATOM	756	OH	TYR	A	208	-76.885	55.829	50.323	1.00	38.50	A	O
ATOM	757	N	ASN	A	209	-68.921	58.697	49.182	1.00	40.97	A	N
ATOM	758	CA	ASN	A	209	-67.588	58.888	48.695	1.00	40.97	A	C
ATOM	759	C	ASN	A	209	-66.664	58.136	49.590	1.00	40.97	A	C
ATOM	760	O	ASN	A	209	-66.732	58.258	50.810	1.00	40.97	A	O
ATOM	761	CB	ASN	A	209	-67.113	60.352	48.702	1.00	40.97	A	C
ATOM	762	CG	ASN	A	209	-67.835	61.104	47.593	1.00	40.97	A	C
ATOM	763	OD1	ASN	A	209	-68.431	62.154	47.824	1.00	40.97	A	O
ATOM	764	ND2	ASN	A	209	-67.772	60.558	46.348	1.00	40.97	A	N
ATOM	765	N	SER	A	210	-65.752	57.344	48.997	1.00	43.32	A	N
ATOM	766	CA	SER	A	210	-64.813	56.617	49.794	1.00	43.32	A	C
ATOM	767	C	SER	A	210	-63.525	57.366	49.697	1.00	43.32	A	C
ATOM	768	O	SER	A	210	-63.276	58.051	48.706	1.00	43.32	A	O
ATOM	769	CB	SER	A	210	-64.561	55.180	49.303	1.00	43.32	A	C
ATOM	770	OG	SER	A	210	-63.964	55.201	48.015	1.00	43.32	A	O
ATOM	771	N	CYS	A	211	-62.680	57.288	50.745	1.00	46.49	A	N
ATOM	772	CA	CYS	A	211	-61.458	58.037	50.699	1.00	46.49	A	C
ATOM	773	C	CYS	A	211	-60.368	57.095	51.121	1.00	46.49	A	C
ATOM	774	O	CYS	A	211	-60.486	56.413	52.138	1.00	46.49	A	O
ATOM	775	CB	CYS	A	211	-61.491	59.233	51.673	1.00	46.49	A	C
ATOM	776	SG	CYS	A	211	-60.443	60.637	51.185	1.00	46.49	A	S
ATOM	777	N	TYR	A	212	-59.276	57.026	50.332	1.00	44.78	A	N
ATOM	778	CA	TYR	A	212	-58.199	56.107	50.597	1.00	44.78	A	C
ATOM	779	C	TYR	A	212	-56.917	56.882	50.657	1.00	44.78	A	C
ATOM	780	O	TYR	A	212	-56.677	57.765	49.836	1.00	44.78	A	O
ATOM	781	CB	TYR	A	212	-58.074	55.081	49.453	1.00	44.78	A	C
ATOM	782	CG	TYR	A	212	-56.846	54.247	49.587	1.00	44.78	A	C
ATOM	783	CD1	TYR	A	212	-55.653	54.700	49.071	1.00	44.78	A	C
ATOM	784	CD2	TYR	A	212	-56.878	53.021	50.212	1.00	44.78	A	C
ATOM	785	CE1	TYR	A	212	-54.508	53.946	49.172	1.00	44.78	A	C
ATOM	786	CE2	TYR	A	212	-55.735	52.261	50.314	1.00	44.78	A	C
ATOM	787	CZ	TYR	A	212	-54.549	52.722	49.795	1.00	44.78	A	C
ATOM	788	OH	TYR	A	212	-53.376	51.944	49.897	1.00	44.78	A	O
ATOM	789	N	SER	A	213	-56.059	56.577	51.652	1.00	38.20	A	N

Figure 10-13

ATOM	790	CA	SER	A	213	-54.788	57.237	51.750	1.00	38.20	A	C
ATOM	791	C	SER	A	213	-53.832	56.271	52.371	1.00	38.20	A	C
ATOM	792	O	SER	A	213	-54.217	55.463	53.215	1.00	38.20	A	O
ATOM	793	CB	SER	A	213	-54.816	58.491	52.638	1.00	38.20	A	C
ATOM	794	OG	SER	A	213	-53.527	59.088	52.683	1.00	38.20	A	O
ATOM	795	N	ALA	A	214	-52.547	56.324	51.962	1.00	32.33	A	N
ATOM	796	CA	ALA	A	214	-51.585	55.410	52.508	1.00	32.33	A	C
ATOM	797	C	ALA	A	214	-50.250	56.074	52.477	1.00	32.33	A	C
ATOM	798	O	ALA	A	214	-50.042	57.046	51.752	1.00	32.33	A	O
ATOM	799	CB	ALA	A	214	-51.460	54.104	51.706	1.00	32.33	A	C
ATOM	800	N	GLY	A	215	-49.302	55.561	53.285	1.00	26.56	A	N
ATOM	801	CA	GLY	A	215	-47.991	56.137	53.309	1.00	26.56	A	C
ATOM	802	C	GLY	A	215	-47.102	55.214	54.074	1.00	26.56	A	C
ATOM	803	O	GLY	A	215	-47.553	54.217	54.637	1.00	26.56	A	O
ATOM	804	N	VAL	A	216	-45.794	55.532	54.106	1.00	26.90	A	N
ATOM	805	CA	VAL	A	216	-44.859	54.712	54.815	1.00	26.90	A	C
ATOM	806	C	VAL	A	216	-44.349	55.526	55.958	1.00	26.90	A	C
ATOM	807	O	VAL	A	216	-44.132	56.729	55.825	1.00	26.90	A	O
ATOM	808	CB	VAL	A	216	-43.678	54.312	53.979	1.00	26.90	A	C
ATOM	809	CG1	VAL	A	216	-42.911	55.583	53.581	1.00	26.90	A	C
ATOM	810	CG2	VAL	A	216	-42.836	53.297	54.767	1.00	26.90	A	C
ATOM	811	N	PHE	A	217	-44.173	54.888	57.134	1.00	30.85	A	N
ATOM	812	CA	PHE	A	217	-43.682	55.621	58.262	1.00	30.85	A	C
ATOM	813	C	PHE	A	217	-42.900	54.664	59.101	1.00	30.85	A	C
ATOM	814	O	PHE	A	217	-43.144	53.458	59.079	1.00	30.85	A	O
ATOM	815	CB	PHE	A	217	-44.816	56.201	59.128	1.00	30.85	A	C
ATOM	816	CG	PHE	A	217	-44.228	57.126	60.138	1.00	30.85	A	C
ATOM	817	CD1	PHE	A	217	-43.866	58.402	59.775	1.00	30.85	A	C
ATOM	818	CD2	PHE	A	217	-44.056	56.731	61.445	1.00	30.85	A	C
ATOM	819	CE1	PHE	A	217	-43.328	59.270	60.696	1.00	30.85	A	C
ATOM	820	CE2	PHE	A	217	-43.520	57.595	62.370	1.00	30.85	A	C
ATOM	821	CZ	PHE	A	217	-43.154	58.866	61.997	1.00	30.85	A	C
ATOM	822	N	HIS	A	218	-41.922	55.182	59.869	1.00	33.56	A	N
ATOM	823	CA	HIS	A	218	-41.141	54.318	60.703	1.00	33.56	A	C
ATOM	824	C	HIS	A	218	-41.746	54.390	62.065	1.00	33.56	A	C
ATOM	825	O	HIS	A	218	-41.818	55.465	62.660	1.00	33.56	A	O
ATOM	826	CB	HIS	A	218	-39.670	54.752	60.822	1.00	33.56	A	C
ATOM	827	CG	HIS	A	218	-38.846	53.853	61.695	1.00	33.56	A	C
ATOM	828	ND1	HIS	A	218	-38.255	52.684	61.262	1.00	33.56	A	N
ATOM	829	CD2	HIS	A	218	-38.512	53.972	63.007	1.00	33.56	A	C
ATOM	830	CE1	HIS	A	218	-37.600	52.160	62.326	1.00	33.56	A	C
ATOM	831	NE2	HIS	A	218	-37.726	52.906	63.410	1.00	33.56	A	N
ATOM	832	N	LEU	A	219	-42.212	53.239	62.588	1.00	36.08	A	N
ATOM	833	CA	LEU	A	219	-42.830	53.253	63.881	1.00	36.08	A	C
ATOM	834	C	LEU	A	219	-41.925	52.581	64.861	1.00	36.08	A	C
ATOM	835	O	LEU	A	219	-41.121	51.722	64.503	1.00	36.08	A	O
ATOM	836	CB	LEU	A	219	-44.196	52.544	63.970	1.00	36.08	A	C
ATOM	837	CG	LEU	A	219	-45.280	53.104	63.026	1.00	36.08	A	C
ATOM	838	CD1	LEU	A	219	-45.377	54.634	63.120	1.00	36.08	A	C
ATOM	839	CD2	LEU	A	219	-45.137	52.572	61.594	1.00	36.08	A	C
ATOM	840	N	HIS	A	220	-42.038	52.981	66.143	1.00	34.21	A	N
ATOM	841	CA	HIS	A	220	-41.224	52.411	67.174	1.00	34.21	A	C
ATOM	842	C	HIS	A	220	-42.089	51.476	67.947	1.00	34.21	A	C
ATOM	843	O	HIS	A	220	-43.309	51.632	68.002	1.00	34.21	A	O
ATOM	844	CB	HIS	A	220	-40.682	53.451	68.167	1.00	34.21	A	C
ATOM	845	CG	HIS	A	220	-39.788	54.471	67.525	1.00	34.21	A	C
ATOM	846	ND1	HIS	A	220	-40.247	55.571	66.835	1.00	34.21	A	N
ATOM	847	CD2	HIS	A	220	-38.429	54.545	67.478	1.00	34.21	A	C
ATOM	848	CE1	HIS	A	220	-39.152	56.250	66.406	1.00	34.21	A	C
ATOM	849	NE2	HIS	A	220	-38.027	55.665	66.773	1.00	34.21	A	N
ATOM	850	N	GLN	A	221	-41.467	50.461	68.569	1.00	31.81	A	N
ATOM	851	CA	GLN	A	221	-42.232	49.508	69.309	1.00	31.81	A	C
ATOM	852	C	GLN	A	221	-42.934	50.254	70.393	1.00	31.81	A	C
ATOM	853	O	GLN	A	221	-42.357	51.128	71.038	1.00	31.81	A	O
ATOM	854	CB	GLN	A	221	-41.376	48.421	69.977	1.00	31.81	A	C
ATOM	855	CG	GLN	A	221	-42.189	47.401	70.773	1.00	31.81	A	C

Figure 10-14

ATOM	856	CD	GLN	A	221	-41.213	46.397	71.370	1.00	31.81	A	C
ATOM	857	OE1	GLN	A	221	-40.001	46.523	71.206	1.00	31.81	A	O
ATOM	858	NE2	GLN	A	221	-41.751	45.374	72.086	1.00	31.81	A	N
ATOM	859	N	GLY	A	222	-44.221	49.916	70.610	1.00	32.05	A	N
ATOM	860	CA	GLY	A	222	-44.987	50.549	71.637	1.00	32.05	A	C
ATOM	861	C	GLY	A	222	-45.904	51.552	71.016	1.00	32.05	A	C
ATOM	862	O	GLY	A	222	-46.872	51.979	71.642	1.00	32.05	A	O
ATOM	863	N	ASP	A	223	-45.642	51.946	69.756	1.00	33.04	A	N
ATOM	864	CA	ASP	A	223	-46.493	52.923	69.143	1.00	33.04	A	C
ATOM	865	C	ASP	A	223	-47.798	52.280	68.796	1.00	33.04	A	C
ATOM	866	O	ASP	A	223	-47.919	51.056	68.783	1.00	33.04	A	O
ATOM	867	CB	ASP	A	223	-45.930	53.556	67.850	1.00	33.04	A	C
ATOM	868	CG	ASP	A	223	-44.827	54.546	68.200	1.00	33.04	A	C
ATOM	869	OD1	ASP	A	223	-44.731	54.936	69.394	1.00	33.04	A	O
ATOM	870	OD2	ASP	A	223	-44.070	54.932	67.270	1.00	33.04	A	O
ATOM	871	N	ILE	A	224	-48.828	53.114	68.535	1.00	35.91	A	N
ATOM	872	CA	ILE	A	224	-50.121	52.620	68.166	1.00	35.91	A	C
ATOM	873	C	ILE	A	224	-50.616	53.474	67.042	1.00	35.91	A	C
ATOM	874	O	ILE	A	224	-50.342	54.671	67.000	1.00	35.91	A	O
ATOM	875	CB	ILE	A	224	-51.144	52.750	69.253	1.00	35.91	A	C
ATOM	876	CG1	ILE	A	224	-50.729	51.943	70.491	1.00	35.91	A	C
ATOM	877	CG2	ILE	A	224	-52.507	52.335	68.673	1.00	35.91	A	C
ATOM	878	CD1	ILE	A	224	-51.552	52.284	71.732	1.00	35.91	A	C
ATOM	879	N	LEU	A	225	-51.350	52.878	66.084	1.00	39.64	A	N
ATOM	880	CA	LEU	A	225	-51.914	53.693	65.051	1.00	39.64	A	C
ATOM	881	C	LEU	A	225	-53.400	53.566	65.142	1.00	39.64	A	C
ATOM	882	O	LEU	A	225	-53.922	52.499	65.468	1.00	39.64	A	O
ATOM	883	CB	LEU	A	225	-51.406	53.400	63.626	1.00	39.64	A	C
ATOM	884	CG	LEU	A	225	-49.932	53.839	63.441	1.00	39.64	A	C
ATOM	885	CD1	LEU	A	225	-49.371	53.574	62.044	1.00	39.64	A	C
ATOM	886	CD2	LEU	A	225	-49.769	55.316	63.786	1.00	39.64	A	C
ATOM	887	N	SER	A	226	-54.118	54.683	64.906	1.00	40.89	A	N
ATOM	888	CA	SER	A	226	-55.550	54.662	64.997	1.00	40.89	A	C
ATOM	889	C	SER	A	226	-56.099	55.498	63.885	1.00	40.89	A	C
ATOM	890	O	SER	A	226	-55.422	56.392	63.381	1.00	40.89	A	O
ATOM	891	CB	SER	A	226	-56.094	55.244	66.314	1.00	40.89	A	C
ATOM	892	OG	SER	A	226	-57.513	55.188	66.329	1.00	40.89	A	O
ATOM	893	N	VAL	A	227	-57.349	55.212	63.461	1.00	43.63	A	N
ATOM	894	CA	VAL	A	227	-57.959	55.991	62.421	1.00	43.63	A	C
ATOM	895	C	VAL	A	227	-59.045	56.813	63.052	1.00	43.63	A	C
ATOM	896	O	VAL	A	227	-59.954	56.288	63.694	1.00	43.63	A	O
ATOM	897	CB	VAL	A	227	-58.556	55.159	61.328	1.00	43.63	A	C
ATOM	898	CG1	VAL	A	227	-59.597	54.214	61.944	1.00	43.63	A	C
ATOM	899	CG2	VAL	A	227	-59.126	56.103	60.257	1.00	43.63	A	C
ATOM	900	N	ILE	A	228	-58.978	58.148	62.874	1.00	47.24	A	N
ATOM	901	CA	ILE	A	228	-59.881	59.038	63.548	1.00	47.24	A	C
ATOM	902	C	ILE	A	228	-60.580	59.930	62.561	1.00	47.24	A	C
ATOM	903	O	ILE	A	228	-59.969	60.425	61.615	1.00	47.24	A	O
ATOM	904	CB	ILE	A	228	-59.120	59.918	64.497	1.00	47.24	A	C
ATOM	905	CG1	ILE	A	228	-58.455	59.075	65.597	1.00	47.24	A	C
ATOM	906	CG2	ILE	A	228	-60.064	60.990	65.034	1.00	47.24	A	C
ATOM	907	CD1	ILE	A	228	-59.456	58.311	66.464	1.00	47.24	A	C
ATOM	908	N	ILE	A	229	-61.900	60.161	62.761	1.00	49.00	A	N
ATOM	909	CA	ILE	A	229	-62.629	61.041	61.883	1.00	49.00	A	C
ATOM	910	C	ILE	A	229	-63.051	62.234	62.677	1.00	49.00	A	C
ATOM	911	O	ILE	A	229	-63.926	62.130	63.537	1.00	49.00	A	O
ATOM	912	CB	ILE	A	229	-63.865	60.423	61.309	1.00	49.00	A	C
ATOM	913	CG1	ILE	A	229	-63.481	59.221	60.437	1.00	49.00	A	C
ATOM	914	CG2	ILE	A	229	-64.647	61.509	60.551	1.00	49.00	A	C
ATOM	915	CD1	ILE	A	229	-64.681	58.375	60.035	1.00	49.00	A	C
ATOM	916	N	PRO	A	230	-62.440	63.367	62.422	1.00	51.49	A	N
ATOM	917	CA	PRO	A	230	-62.810	64.534	63.166	1.00	51.49	A	C
ATOM	918	C	PRO	A	230	-64.189	64.998	62.847	1.00	51.49	A	C
ATOM	919	O	PRO	A	230	-64.349	65.871	61.997	1.00	51.49	A	O
ATOM	920	CB	PRO	A	230	-61.715	65.566	62.910	1.00	51.49	A	C
ATOM	921	CG	PRO	A	230	-60.473	64.697	62.638	1.00	51.49	A	C

Figure 10-15

ATOM	922	CD	PRO	A	230	-61.037	63.395	62.040	1.00	51.49	A	C
ATOM	923	N	ARG	A	231	-65.196	64.477	63.562	1.00	51.08	A	N
ATOM	924	CA	ARG	A	231	-66.533	64.934	63.357	1.00	51.08	A	C
ATOM	925	C	ARG	A	231	-67.397	64.162	64.292	1.00	51.08	A	C
ATOM	926	O	ARG	A	231	-67.191	62.967	64.497	1.00	51.08	A	O
ATOM	927	CB	ARG	A	231	-67.082	64.720	61.940	1.00	51.08	A	C
ATOM	928	CG	ARG	A	231	-68.470	65.343	61.791	1.00	51.08	A	C
ATOM	929	CD	ARG	A	231	-68.978	65.418	60.355	1.00	51.08	A	C
ATOM	930	NE	ARG	A	231	-70.259	66.178	60.395	1.00	51.08	A	N
ATOM	931	CZ	ARG	A	231	-70.237	67.542	60.371	1.00	51.08	A	C
ATOM	932	NH1	ARG	A	231	-69.045	68.205	60.310	1.00	51.08	A	N
ATOM	933	NH2	ARG	A	231	-71.407	68.245	60.409	1.00	51.08	A	N
ATOM	934	N	ALA	A	232	-68.387	64.832	64.908	1.00	49.08	A	N
ATOM	935	CA	ALA	A	232	-69.245	64.098	65.788	1.00	49.08	A	C
ATOM	936	C	ALA	A	232	-70.211	63.366	64.919	1.00	49.08	A	C
ATOM	937	O	ALA	A	232	-70.731	63.948	63.968	1.00	49.08	A	O
ATOM	938	CB	ALA	A	232	-70.054	64.986	66.748	1.00	49.08	A	C
ATOM	939	N	ARG	A	233	-70.494	62.085	65.253	1.00	50.24	A	N
ATOM	940	CA	ARG	A	233	-71.402	61.279	64.484	1.00	50.24	A	C
ATOM	941	C	ARG	A	233	-71.022	61.403	63.044	1.00	50.24	A	C
ATOM	942	O	ARG	A	233	-71.679	62.107	62.281	1.00	50.24	A	O
ATOM	943	CB	ARG	A	233	-72.868	61.720	64.619	1.00	50.24	A	C
ATOM	944	CG	ARG	A	233	-73.424	61.597	66.038	1.00	50.24	A	C
ATOM	945	CD	ARG	A	233	-74.885	62.039	66.153	1.00	50.24	A	C
ATOM	946	NE	ARG	A	233	-75.294	61.872	67.575	1.00	50.24	A	N
ATOM	947	CZ	ARG	A	233	-76.412	62.505	68.037	1.00	50.24	A	C
ATOM	948	NH1	ARG	A	233	-77.159	63.275	67.193	1.00	50.24	A	N
ATOM	949	NH2	ARG	A	233	-76.779	62.372	69.345	1.00	50.24	A	N
ATOM	950	N	ALA	A	234	-69.930	60.731	62.644	1.00	53.30	A	N
ATOM	951	CA	ALA	A	234	-69.388	60.880	61.326	1.00	53.30	A	C
ATOM	952	C	ALA	A	234	-70.366	60.497	60.250	1.00	53.30	A	C
ATOM	953	O	ALA	A	234	-70.467	61.219	59.261	1.00	53.30	A	O
ATOM	954	CB	ALA	A	234	-68.103	60.066	61.110	1.00	53.30	A	C
ATOM	955	N	LYS	A	235	-71.179	59.430	60.428	1.00	58.84	A	N
ATOM	956	CA	LYS	A	235	-72.008	58.958	59.343	1.00	58.84	A	C
ATOM	957	C	LYS	A	235	-71.159	58.368	58.251	1.00	58.84	A	C
ATOM	958	O	LYS	A	235	-70.944	58.972	57.200	1.00	58.84	A	O
ATOM	959	CB	LYS	A	235	-72.898	60.045	58.714	1.00	58.84	A	C
ATOM	960	CG	LYS	A	235	-74.128	60.402	59.550	1.00	58.84	A	C
ATOM	961	CD	LYS	A	235	-73.804	61.101	60.869	1.00	58.84	A	C
ATOM	962	CE	LYS	A	235	-75.042	61.451	61.697	1.00	58.84	A	C
ATOM	963	NZ	LYS	A	235	-75.606	60.225	62.303	1.00	58.84	A	N
ATOM	964	N	LEU	A	236	-70.625	57.153	58.530	1.00	63.52	A	N
ATOM	965	CA	LEU	A	236	-69.779	56.382	57.650	1.00	63.52	A	C
ATOM	966	C	LEU	A	236	-70.521	55.142	57.209	1.00	63.52	A	C
ATOM	967	O	LEU	A	236	-71.707	54.967	57.481	1.00	63.52	A	O
ATOM	968	CB	LEU	A	236	-68.549	55.760	58.323	1.00	63.52	A	C
ATOM	969	CG	LEU	A	236	-67.649	56.709	59.111	1.00	63.52	A	C
ATOM	970	CD1	LEU	A	236	-68.382	57.239	60.350	1.00	63.52	A	C
ATOM	971	CD2	LEU	A	236	-66.327	56.009	59.456	1.00	63.52	A	C
ATOM	972	N	ASN	A	237	-69.820	54.284	56.427	1.00	65.59	A	N
ATOM	973	CA	ASN	A	237	-70.289	53.030	55.874	1.00	65.59	A	C
ATOM	974	C	ASN	A	237	-70.314	51.847	56.820	1.00	65.59	A	C
ATOM	975	O	ASN	A	237	-71.312	51.135	56.912	1.00	65.59	A	O
ATOM	976	CB	ASN	A	237	-69.439	52.611	54.660	1.00	65.59	A	C
ATOM	977	CG	ASN	A	237	-70.166	51.510	53.903	1.00	65.59	A	C
ATOM	978	OD1	ASN	A	237	-69.599	50.886	53.006	1.00	65.59	A	O
ATOM	979	ND2	ASN	A	237	-71.456	51.268	54.256	1.00	65.59	A	N
ATOM	980	N	LEU	A	238	-69.199	51.580	57.527	1.00	66.15	A	N
ATOM	981	CA	LEU	A	238	-69.065	50.430	58.388	1.00	66.15	A	C
ATOM	982	C	LEU	A	238	-69.165	49.164	57.586	1.00	66.15	A	C
ATOM	983	O	LEU	A	238	-69.289	48.076	58.148	1.00	66.15	A	O
ATOM	984	CB	LEU	A	238	-70.068	50.386	59.550	1.00	66.15	A	C
ATOM	985	CG	LEU	A	238	-69.921	51.628	60.440	1.00	66.15	A	C
ATOM	986	CD1	LEU	A	238	-70.497	51.407	61.847	1.00	66.15	A	C
ATOM	987	CD2	LEU	A	238	-68.478	52.148	60.405	1.00	66.15	A	C

Figure 10-16

ATOM	988	N	SER	A	239	-69.078	49.258	56.244	1.00	64.73	A	N
ATOM	989	CA	SER	A	239	-69.123	48.055	55.456	1.00	64.73	A	C
ATOM	990	C	SER	A	239	-67.730	47.510	55.404	1.00	64.73	A	C
ATOM	991	O	SER	A	239	-66.780	48.187	55.011	1.00	64.73	A	O
ATOM	992	CB	SER	A	239	-69.591	48.271	54.005	1.00	64.73	A	C
ATOM	993	OG	SER	A	239	-70.966	48.624	53.974	1.00	64.73	A	O
ATOM	994	N	PRO	A	240	-67.630	46.257	55.761	1.00	68.26	A	N
ATOM	995	CA	PRO	A	240	-66.368	45.581	55.900	1.00	68.26	A	C
ATOM	996	C	PRO	A	240	-65.516	45.774	54.696	1.00	68.26	A	C
ATOM	997	O	PRO	A	240	-64.292	45.821	54.834	1.00	68.26	A	O
ATOM	998	CB	PRO	A	240	-66.717	44.107	56.094	1.00	68.26	A	C
ATOM	999	CG	PRO	A	240	-68.041	43.955	55.326	1.00	68.26	A	C
ATOM	1000	CD	PRO	A	240	-68.715	45.326	55.491	1.00	68.26	A	C
ATOM	1001	N	HIS	A	241	-66.140	45.848	53.511	1.00	72.12	A	N
ATOM	1002	CA	HIS	A	241	-65.394	46.066	52.312	1.00	72.12	A	C
ATOM	1003	C	HIS	A	241	-65.649	47.491	51.968	1.00	72.12	A	C
ATOM	1004	O	HIS	A	241	-66.671	47.807	51.367	1.00	72.12	A	O
ATOM	1005	CB	HIS	A	241	-65.918	45.273	51.100	1.00	72.12	A	C
ATOM	1006	CG	HIS	A	241	-65.935	43.785	51.286	1.00	72.12	A	C
ATOM	1007	ND1	HIS	A	241	-66.973	43.096	51.875	1.00	72.12	A	N
ATOM	1008	CD2	HIS	A	241	-65.018	42.845	50.930	1.00	72.12	A	C
ATOM	1009	CE1	HIS	A	241	-66.634	41.782	51.846	1.00	72.12	A	C
ATOM	1010	NE2	HIS	A	241	-65.457	41.581	51.282	1.00	72.12	A	N
ATOM	1011	N	GLY	A	242	-64.705	48.388	52.278	1.00	75.74	A	N
ATOM	1012	CA	GLY	A	242	-64.941	49.766	51.984	1.00	75.74	A	C
ATOM	1013	C	GLY	A	242	-64.409	50.594	53.106	1.00	75.74	A	C
ATOM	1014	O	GLY	A	242	-63.864	51.669	52.858	1.00	75.74	A	O
ATOM	1015	N	THR	A	243	-64.541	50.159	54.373	1.00	77.20	A	N
ATOM	1016	CA	THR	A	243	-63.875	50.980	55.338	1.00	77.20	A	C
ATOM	1017	C	THR	A	243	-62.978	50.136	56.188	1.00	77.20	A	C
ATOM	1018	O	THR	A	243	-63.399	49.520	57.157	1.00	77.20	A	O
ATOM	1019	CB	THR	A	243	-64.780	51.875	56.141	1.00	77.20	A	C
ATOM	1020	OG1	THR	A	243	-63.999	52.807	56.869	1.00	77.20	A	O
ATOM	1021	CG2	THR	A	243	-65.659	51.063	57.087	1.00	77.20	A	C
ATOM	1022	N	PHE	A	244	-61.675	50.103	55.855	1.00	71.63	A	N
ATOM	1023	CA	PHE	A	244	-60.762	49.240	56.551	1.00	71.63	A	C
ATOM	1024	C	PHE	A	244	-59.497	49.984	56.858	1.00	71.63	A	C
ATOM	1025	O	PHE	A	244	-59.299	51.104	56.394	1.00	71.63	A	O
ATOM	1026	CB	PHE	A	244	-60.414	48.005	55.711	1.00	71.63	A	C
ATOM	1027	CG	PHE	A	244	-60.023	48.541	54.377	1.00	71.63	A	C
ATOM	1028	CD1	PHE	A	244	-58.732	48.931	54.111	1.00	71.63	A	C
ATOM	1029	CD2	PHE	A	244	-60.972	48.672	53.388	1.00	71.63	A	C
ATOM	1030	CE1	PHE	A	244	-58.394	49.433	52.876	1.00	71.63	A	C
ATOM	1031	CE2	PHE	A	244	-60.640	49.172	52.152	1.00	71.63	A	C
ATOM	1032	CZ	PHE	A	244	-59.345	49.550	51.891	1.00	71.63	A	C
ATOM	1033	N	LEU	A	245	-58.623	49.382	57.699	1.00	65.02	A	N
ATOM	1034	CA	LEU	A	245	-57.386	50.024	58.072	1.00	65.02	A	C
ATOM	1035	C	LEU	A	245	-56.378	48.928	58.155	1.00	65.02	A	C
ATOM	1036	O	LEU	A	245	-56.706	47.825	58.593	1.00	65.02	A	O
ATOM	1037	CB	LEU	A	245	-57.306	50.600	59.491	1.00	65.02	A	C
ATOM	1038	CG	LEU	A	245	-58.637	51.107	60.001	1.00	65.02	A	C
ATOM	1039	CD1	LEU	A	245	-59.305	52.123	59.058	1.00	65.02	A	C
ATOM	1040	CD2	LEU	A	245	-59.456	49.863	60.320	1.00	65.02	A	C
ATOM	1041	N	GLY	A	246	-55.111	49.193	57.773	1.00	55.28	A	N
ATOM	1042	CA	GLY	A	246	-54.188	48.101	57.880	1.00	55.28	A	C
ATOM	1043	C	GLY	A	246	-52.765	48.568	57.809	1.00	55.28	A	C
ATOM	1044	O	GLY	A	246	-52.479	49.683	57.374	1.00	55.28	A	O
ATOM	1045	N	PHE	A	247	-51.837	47.684	58.255	1.00	47.05	A	N
ATOM	1046	CA	PHE	A	247	-50.423	47.943	58.215	1.00	47.05	A	C
ATOM	1047	C	PHE	A	247	-49.753	46.756	57.618	1.00	47.05	A	C
ATOM	1048	O	PHE	A	247	-50.110	45.614	57.909	1.00	47.05	A	O
ATOM	1049	CB	PHE	A	247	-49.633	47.902	59.529	1.00	47.05	A	C
ATOM	1050	CG	PHE	A	247	-50.033	48.961	60.454	1.00	47.05	A	C
ATOM	1051	CD1	PHE	A	247	-50.209	50.226	59.975	1.00	47.05	A	C
ATOM	1052	CD2	PHE	A	247	-50.132	48.690	61.798	1.00	47.05	A	C
ATOM	1053	CE1	PHE	A	247	-50.564	51.207	60.849	1.00	47.05	A	C

Figure 10-17

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ATOM 1054  CE2 PHE A 247     -50.482  49.687  62.670  1.00 47.05      A    C
ATOM 1055  CZ  PHE A 247     -50.706  50.945  62.186  1.00 47.05      A    C
ATOM 1056  N   VAL A 248     -48.709  47.018  56.814  1.00 40.65      A    N
ATOM 1057  CA  VAL A 248     -47.886  45.964  56.318  1.00 40.65      A    C
ATOM 1058  C   VAL A 248     -46.503  46.341  56.720  1.00 40.65      A    C
ATOM 1059  O   VAL A 248     -46.102  47.497  56.591  1.00 40.65      A    O
ATOM 1060  CB  VAL A 248     -47.902  45.816  54.827  1.00 40.65      A    C
ATOM 1061  CG1 VAL A 248     -47.460  47.146  54.204  1.00 40.65      A    C
ATOM 1062  CG2 VAL A 248     -46.986  44.641  54.445  1.00 40.65      A    C
ATOM 1063  N   LYS A 249     -45.738  45.364  57.235  1.00 34.46      A    N
ATOM 1064  CA  LYS A 249     -44.410  45.659  57.673  1.00 34.46      A    C
ATOM 1065  C   LYS A 249     -43.516  45.433  56.504  1.00 34.46      A    C
ATOM 1066  O   LYS A 249     -43.521  44.361  55.900  1.00 34.46      A    O
ATOM 1067  CB  LYS A 249     -43.978  44.749  58.837  1.00 34.46      A    C
ATOM 1068  CG  LYS A 249     -42.653  45.114  59.507  1.00 34.46      A    C
ATOM 1069  CD  LYS A 249     -42.516  44.489  60.900  1.00 34.46      A    C
ATOM 1070  CE  LYS A 249     -43.297  43.180  61.059  1.00 34.46      A    C
ATOM 1071  NZ  LYS A 249     -43.174  42.658  62.437  1.00 34.46      A    N
ATOM 1072  N   LEU A 250     -42.727  46.462  56.142  1.00 29.77      A    N
ATOM 1073  CA  LEU A 250     -41.867  46.345  55.005  1.00 29.77      A    C
ATOM 1074  C   LEU A 250     -40.700  45.438  55.373  1.00 29.77      A    C
ATOM 1075  1OCT LEU A 250     -39.930  45.797  56.303  1.00 29.77      A    O
ATOM 1076  CB  LEU A 250     -41.296  47.693  54.537  1.00 29.77      A    C
ATOM 1077  CG  LEU A 250     -42.377  48.651  54.005  1.00 29.77      A    C
ATOM 1078  CD1 LEU A 250     -41.770  49.984  53.546  1.00 29.77      A    C
ATOM 1079  CD2 LEU A 250     -43.229  47.982  52.915  1.00 29.77      A    C
ATOM 1080  2OCT LEU A 250     -40.568  44.371  54.716  1.00 29.77      A    O
ATOM 1081  N   GLN B 114     -37.938  37.877  45.030  1.00 54.74      B    N
ATOM 1082  CA  GLN B 114     -38.565  38.715  44.064  1.00 54.74      B    C
ATOM 1083  C   GLN B 114     -40.017  38.463  44.229  1.00 54.74      B    C
ATOM 1084  O   GLN B 114     -40.500  37.373  43.934  1.00 54.74      B    O
ATOM 1085  CB  GLN B 114     -38.199  38.375  42.609  1.00 54.74      B    C
ATOM 1086  CG  GLN B 114     -36.722  38.592  42.276  1.00 54.74      B    C
ATOM 1087  CD  GLN B 114     -36.515  38.210  40.817  1.00 54.74      B    C
ATOM 1088  OE1 GLN B 114     -37.454  37.811  40.131  1.00 54.74      B    O
ATOM 1089  NE2 GLN B 114     -35.253  38.335  40.328  1.00 54.74      B    N
ATOM 1090  N   HIS B 115     -40.756  39.460  44.743  1.00 53.85      B    N
ATOM 1091  CA  HIS B 115     -42.156  39.251  44.927  1.00 53.85      B    C
ATOM 1092  C   HIS B 115     -42.772  39.257  43.570  1.00 53.85      B    C
ATOM 1093  O   HIS B 115     -42.484  40.131  42.755  1.00 53.85      B    O
ATOM 1094  CB  HIS B 115     -42.835  40.352  45.759  1.00 53.85      B    C
ATOM 1095  CG  HIS B 115     -42.651  41.718  45.168  1.00 53.85      B    C
ATOM 1096  ND1 HIS B 115     -43.404  42.221  44.130  1.00 53.85      B    N
ATOM 1097  CD2 HIS B 115     -41.764  42.699  45.491  1.00 53.85      B    C
ATOM 1098  CE1 HIS B 115     -42.937  43.470  43.878  1.00 53.85      B    C
ATOM 1099  NE2 HIS B 115     -41.943  43.803  44.679  1.00 53.85      B    N
ATOM 1100  N   SER B 116     -43.644  38.269  43.292  1.00 49.07      B    N
ATOM 1101  CA  SER B 116     -44.262  38.210  42.001  1.00 49.07      B    C
ATOM 1102  C   SER B 116     -45.332  39.249  41.973  1.00 49.07      B    C
ATOM 1103  O   SER B 116     -45.861  39.633  43.016  1.00 49.07      B    O
ATOM 1104  CB  SER B 116     -44.938  36.861  41.700  1.00 49.07      B    C
ATOM 1105  OG  SER B 116     -43.969  35.825  41.656  1.00 49.07      B    O
ATOM 1106  N   VAL B 117     -45.654  39.757  40.767  1.00 46.78      B    N
ATOM 1107  CA  VAL B 117     -46.690  40.741  40.645  1.00 46.78      B    C
ATOM 1108  C   VAL B 117     -47.186  40.696  39.232  1.00 46.78      B    C
ATOM 1109  O   VAL B 117     -46.451  40.329  38.316  1.00 46.78      B    O
ATOM 1110  CB  VAL B 117     -46.209  42.148  40.865  1.00 46.78      B    C
ATOM 1111  CG1 VAL B 117     -45.652  42.275  42.291  1.00 46.78      B    C
ATOM 1112  CG2 VAL B 117     -45.192  42.491  39.763  1.00 46.78      B    C
ATOM 1113  N   LEU B 118     -48.465  41.063  39.024  1.00 46.47      B    N
ATOM 1114  CA  LEU B 118     -49.022  41.088  37.701  1.00 46.47      B    C
ATOM 1115  C   LEU B 118     -49.920  42.286  37.654  1.00 46.47      B    C
ATOM 1116  O   LEU B 118     -50.627  42.575  38.619  1.00 46.47      B    O
ATOM 1117  CB  LEU B 118     -49.844  39.815  37.393  1.00 46.47      B    C
ATOM 1118  CG  LEU B 118     -50.418  39.675  35.963  1.00 46.47      B    C
ATOM 1119  CD1 LEU B 118     -51.077  38.297  35.784  1.00 46.47      B    C
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Figure 10-18

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ATOM 1120  CD2 LEU B 118     -51.397  40.800  35.593  1.00 46.47      B     C
ATOM 1121  N   HIS B 119     -49.906  43.040  36.535  1.00 47.74      B     N
ATOM 1122  CA  HIS B 119     -50.772  44.182  36.484  1.00 47.74      B     C
ATOM 1123  C   HIS B 119     -51.453  44.261  35.152  1.00 47.74      B     C
ATOM 1124  O   HIS B 119     -50.888  43.904  34.119  1.00 47.74      B     O
ATOM 1125  CB  HIS B 119     -50.066  45.513  36.805  1.00 47.74      B     C
ATOM 1126  CG  HIS B 119     -48.647  45.572  36.328  1.00 47.74      B     C
ATOM 1127  ND1 HIS B 119     -47.590  44.987  36.988  1.00 47.74      B     N
ATOM 1128  CD2 HIS B 119     -48.111  46.168  35.231  1.00 47.74      B     C
ATOM 1129  CE1 HIS B 119     -46.476  45.256  36.260  1.00 47.74      B     C
ATOM 1130  NE2 HIS B 119     -46.743  45.971  35.183  1.00 47.74      B     N
ATOM 1131  N   LEU B 120     -52.723  44.721  35.173  1.00 49.98      B     N
ATOM 1132  CA  LEU B 120     -53.537  44.852  33.995  1.00 49.98      B     C
ATOM 1133  C   LEU B 120     -53.826  46.305  33.778  1.00 49.98      B     C
ATOM 1134  O   LEU B 120     -53.915  47.083  34.727  1.00 49.98      B     O
ATOM 1135  CB  LEU B 120     -54.901  44.140  34.089  1.00 49.98      B     C
ATOM 1136  CG  LEU B 120     -54.801  42.602  34.109  1.00 49.98      B     C
ATOM 1137  CD1 LEU B 120     -54.029  42.113  35.340  1.00 49.98      B     C
ATOM 1138  CD2 LEU B 120     -56.180  41.939  33.989  1.00 49.98      B     C
ATOM 1139  N   VAL B 121     -53.983  46.691  32.494  1.00 49.34      B     N
ATOM 1140  CA  VAL B 121     -54.186  48.046  32.053  1.00 49.34      B     C
ATOM 1141  C   VAL B 121     -55.378  48.003  31.120  1.00 49.34      B     C
ATOM 1142  O   VAL B 121     -55.494  47.075  30.324  1.00 49.34      B     O
ATOM 1143  CB  VAL B 121     -52.930  48.465  31.312  1.00 49.34      B     C
ATOM 1144  CG1 VAL B 121     -52.974  49.900  30.768  1.00 49.34      B     C
ATOM 1145  CG2 VAL B 121     -51.756  48.219  32.276  1.00 49.34      B     C
ATOM 1146  N   PRO B 122     -56.277  48.955  31.180  1.00 47.62      B     N
ATOM 1147  CA  PRO B 122     -57.462  48.908  30.368  1.00 47.62      B     C
ATOM 1148  C   PRO B 122     -57.082  48.911  28.927  1.00 47.62      B     C
ATOM 1149  O   PRO B 122     -56.067  49.513  28.578  1.00 47.62      B     O
ATOM 1150  CB  PRO B 122     -58.209  50.181  30.661  1.00 47.62      B     C
ATOM 1151  CG  PRO B 122     -57.053  51.174  30.831  1.00 47.62      B     C
ATOM 1152  CD  PRO B 122     -55.878  50.324  31.348  1.00 47.62      B     C
ATOM 1153  N   ILE B 123     -57.904  48.265  28.078  1.00 42.63      B     N
ATOM 1154  CA  ILE B 123     -57.619  48.243  26.677  1.00 42.63      B     C
ATOM 1155  C   ILE B 123     -58.545  49.209  25.997  1.00 42.63      B     C
ATOM 1156  O   ILE B 123     -59.751  48.998  25.886  1.00 42.63      B     O
ATOM 1157  CB  ILE B 123     -57.761  46.876  26.056  1.00 42.63      B     C
ATOM 1158  CG1 ILE B 123     -57.325  46.918  24.583  1.00 42.63      B     C
ATOM 1159  CG2 ILE B 123     -59.188  46.351  26.289  1.00 42.63      B     C
ATOM 1160  CD1 ILE B 123     -55.833  47.194  24.403  1.00 42.63      B     C
ATOM 1161  N   ASN B 124     -57.963  50.315  25.506  1.00 35.86      B     N
ATOM 1162  CA  ASN B 124     -58.688  51.362  24.848  1.00 35.86      B     C
ATOM 1163  C   ASN B 124     -59.251  50.809  23.577  1.00 35.86      B     C
ATOM 1164  O   ASN B 124     -60.274  51.272  23.076  1.00 35.86      B     O
ATOM 1165  CB  ASN B 124     -57.786  52.560  24.500  1.00 35.86      B     C
ATOM 1166  CG  ASN B 124     -58.647  53.709  23.988  1.00 35.86      B     C
ATOM 1167  OD1 ASN B 124     -59.297  53.609  22.949  1.00 35.86      B     O
ATOM 1168  ND2 ASN B 124     -58.645  54.845  24.737  1.00 35.86      B     N
ATOM 1169  N   ALA B 125     -58.561  49.802  23.016  1.00 31.82      B     N
ATOM 1170  CA  ALA B 125     -58.915  49.215  21.758  1.00 31.82      B     C
ATOM 1171  C   ALA B 125     -60.271  48.572  21.797  1.00 31.82      B     C
ATOM 1172  O   ALA B 125     -61.031  48.700  20.838  1.00 31.82      B     O
ATOM 1173  CB  ALA B 125     -57.912  48.137  21.312  1.00 31.82      B     C
ATOM 1174  N   THR B 126     -60.640  47.878  22.895  1.00 29.76      B     N
ATOM 1175  CA  THR B 126     -61.871  47.140  22.815  1.00 29.76      B     C
ATOM 1176  C   THR B 126     -62.928  47.769  23.673  1.00 29.76      B     C
ATOM 1177  O   THR B 126     -62.640  48.496  24.622  1.00 29.76      B     O
ATOM 1178  CB  THR B 126     -61.724  45.706  23.236  1.00 29.76      B     C
ATOM 1179  OG1 THR B 126     -60.676  45.094  22.498  1.00 29.76      B     O
ATOM 1180  CG2 THR B 126     -63.039  44.972  22.926  1.00 29.76      B     C
ATOM 1181  N   SER B 127     -64.206  47.503  23.323  1.00 31.01      B     N
ATOM 1182  CA  SER B 127     -65.333  48.040  24.028  1.00 31.01      B     C
ATOM 1183  C   SER B 127     -65.464  47.330  25.336  1.00 31.01      B     C
ATOM 1184  O   SER B 127     -64.906  46.253  25.538  1.00 31.01      B     O
ATOM 1185  CB  SER B 127     -66.664  47.875  23.275  1.00 31.01      B     C
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Figure 10-19

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ATOM 1186  OG  SER B 127     -66.974  46.497  23.135  1.00 31.01      B    O
ATOM 1187  N   LYS B 128     -66.227  47.943  26.262  1.00 36.69      B    N
ATOM 1188  CA  LYS B 128     -66.407  47.434  27.589  1.00 36.69      B    C
ATOM 1189  C   LYS B 128     -67.237  46.193  27.514  1.00 36.69      B    C
ATOM 1190  O   LYS B 128     -68.126  46.079  26.671  1.00 36.69      B    O
ATOM 1191  CB  LYS B 128     -67.135  48.428  28.503  1.00 36.69      B    C
ATOM 1192  CG  LYS B 128     -67.007  48.105  29.987  1.00 36.69      B    C
ATOM 1193  CD  LYS B 128     -65.589  48.300  30.509  1.00 36.69      B    C
ATOM 1194  CE  LYS B 128     -64.803  49.347  29.724  1.00 36.69      B    C
ATOM 1195  NZ  LYS B 128     -65.437  50.676  29.874  1.00 36.69      B    N
ATOM 1196  N   ASP B 129     -66.946  45.217  28.399  1.00 40.37      B    N
ATOM 1197  CA  ASP B 129     -67.672  43.981  28.400  1.00 40.37      B    C
ATOM 1198  C   ASP B 129     -68.979  44.213  29.076  1.00 40.37      B    C
ATOM 1199  O   ASP B 129     -69.042  44.809  30.152  1.00 40.37      B    O
ATOM 1200  CB  ASP B 129     -66.946  42.845  29.142  1.00 40.37      B    C
ATOM 1201  CG  ASP B 129     -67.635  41.527  28.808  1.00 40.37      B    C
ATOM 1202  OD1 ASP B 129     -68.649  41.558  28.062  1.00 40.37      B    O
ATOM 1203  OD2 ASP B 129     -67.152  40.470  29.295  1.00 40.37      B    O
ATOM 1204  N   ASP B 130     -70.063  43.732  28.443  1.00 44.03      B    N
ATOM 1205  CA  ASP B 130     -71.375  43.944  28.961  1.00 44.03      B    C
ATOM 1206  C   ASP B 130     -71.913  42.653  29.491  1.00 44.03      B    C
ATOM 1207  O   ASP B 130     -71.933  41.624  28.820  1.00 44.03      B    O
ATOM 1208  CB  ASP B 130     -72.355  44.465  27.890  1.00 44.03      B    C
ATOM 1209  CG  ASP B 130     -73.659  44.901  28.546  1.00 44.03      B    C
ATOM 1210  OD1 ASP B 130     -74.236  44.101  29.329  1.00 44.03      B    O
ATOM 1211  OD2 ASP B 130     -74.094  46.052  28.272  1.00 44.03      B    O
ATOM 1212  N   SER B 131     -72.339  42.722  30.762  1.00 47.28      B    N
ATOM 1213  CA  SER B 131     -73.012  41.724  31.535  1.00 47.28      B    C
ATOM 1214  C   SER B 131     -73.979  42.610  32.247  1.00 47.28      B    C
ATOM 1215  O   SER B 131     -74.115  43.759  31.841  1.00 47.28      B    O
ATOM 1216  CB  SER B 131     -72.131  41.060  32.605  1.00 47.28      B    C
ATOM 1217  OG  SER B 131     -72.881  40.087  33.318  1.00 47.28      B    O
ATOM 1218  N   ASP B 132     -74.691  42.152  33.289  1.00 45.71      B    N
ATOM 1219  CA  ASP B 132     -75.546  43.093  33.961  1.00 45.71      B    C
ATOM 1220  C   ASP B 132     -74.617  44.119  34.506  1.00 45.71      B    C
ATOM 1221  O   ASP B 132     -74.920  45.310  34.600  1.00 45.71      B    O
ATOM 1222  CB  ASP B 132     -76.310  42.476  35.145  1.00 45.71      B    C
ATOM 1223  CG  ASP B 132     -77.283  43.521  35.676  1.00 45.71      B    C
ATOM 1224  OD1 ASP B 132     -77.318  44.645  35.107  1.00 45.71      B    O
ATOM 1225  OD2 ASP B 132     -78.009  43.207  36.656  1.00 45.71      B    O
ATOM 1226  N   VAL B 133     -73.419  43.646  34.865  1.00 46.63      B    N
ATOM 1227  CA  VAL B 133     -72.415  44.498  35.390  1.00 46.63      B    C
ATOM 1228  C   VAL B 133     -71.538  44.822  34.220  1.00 46.63      B    C
ATOM 1229  O   VAL B 133     -71.741  44.298  33.126  1.00 46.63      B    O
ATOM 1230  CB  VAL B 133     -71.617  43.816  36.453  1.00 46.63      B    C
ATOM 1231  CG1 VAL B 133     -70.393  43.131  35.819  1.00 46.63      B    C
ATOM 1232  CG2 VAL B 133     -71.377  44.815  37.586  1.00 46.63      B    C
ATOM 1233  N   THR B 134     -70.584  45.752  34.392  1.00 47.14      B    N
ATOM 1234  CA  THR B 134     -69.750  46.114  33.284  1.00 47.14      B    C
ATOM 1235  C   THR B 134     -68.326  45.839  33.662  1.00 47.14      B    C
ATOM 1236  O   THR B 134     -67.873  46.230  34.737  1.00 47.14      B    O
ATOM 1237  CB  THR B 134     -69.878  47.569  32.945  1.00 47.14      B    C
ATOM 1238  OG1 THR B 134     -69.085  47.886  31.814  1.00 47.14      B    O
ATOM 1239  CG2 THR B 134     -69.447  48.404  34.159  1.00 47.14      B    C
ATOM 1240  N   GLU B 135     -67.579  45.161  32.766  1.00 48.66      B    N
ATOM 1241  CA  GLU B 135     -66.223  44.775  33.039  1.00 48.66      B    C
ATOM 1242  C   GLU B 135     -65.349  45.448  32.028  1.00 48.66      B    C
ATOM 1243  O   GLU B 135     -65.730  45.578  30.866  1.00 48.66      B    O
ATOM 1244  CB  GLU B 135     -66.042  43.259  32.868  1.00 48.66      B    C
ATOM 1245  CG  GLU B 135     -66.858  42.444  33.877  1.00 48.66      B    C
ATOM 1246  CD  GLU B 135     -66.767  40.972  33.498  1.00 48.66      B    C
ATOM 1247  OE1 GLU B 135     -66.060  40.658  32.503  1.00 48.66      B    O
ATOM 1248  OE2 GLU B 135     -67.406  40.143  34.198  1.00 48.66      B    O
ATOM 1249  N   VAL B 136     -64.141  45.906  32.422  1.00 53.13      B    N
ATOM 1250  CA  VAL B 136     -63.382  46.571  31.398  1.00 53.13      B    C
ATOM 1251  C   VAL B 136     -62.455  45.566  30.802  1.00 53.13      B    C
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Figure 10-20

ATOM	1252	O	VAL	B	136	-62.023	44.633	31.476	1.00	53.13	B	O
ATOM	1253	CB	VAL	B	136	-62.529	47.727	31.817	1.00	53.13	B	C
ATOM	1254	CG1	VAL	B	136	-63.312	48.637	32.777	1.00	53.13	B	C
ATOM	1255	CG2	VAL	B	136	-61.181	47.189	32.269	1.00	53.13	B	C
ATOM	1256	N	MET	B	137	-62.123	45.723	29.506	1.00	54.30	B	N
ATOM	1257	CA	MET	B	137	-61.238	44.769	28.914	1.00	54.30	B	C
ATOM	1258	C	MET	B	137	-59.846	45.076	29.333	1.00	54.30	B	C
ATOM	1259	O	MET	B	137	-59.398	46.224	29.311	1.00	54.30	B	O
ATOM	1260	CB	MET	B	137	-61.325	44.641	27.387	1.00	54.30	B	C
ATOM	1261	CG	MET	B	137	-62.612	43.929	26.975	1.00	54.30	B	C
ATOM	1262	SD	MET	B	137	-62.562	43.148	25.339	1.00	54.30	B	S
ATOM	1263	CE	MET	B	137	-61.402	41.839	25.830	1.00	54.30	B	C
ATOM	1264	N	TRP	B	138	-59.120	44.015	29.731	1.00	53.49	B	N
ATOM	1265	CA	TRP	B	138	-57.824	44.230	30.287	1.00	53.49	B	C
ATOM	1266	C	TRP	B	138	-56.780	43.762	29.333	1.00	53.49	B	C
ATOM	1267	O	TRP	B	138	-56.990	42.829	28.558	1.00	53.49	B	O
ATOM	1268	CB	TRP	B	138	-57.635	43.483	31.609	1.00	53.49	B	C
ATOM	1269	CG	TRP	B	138	-58.631	43.907	32.660	1.00	53.49	B	C
ATOM	1270	CD1	TRP	B	138	-59.574	43.169	33.314	1.00	53.49	B	C
ATOM	1271	CD2	TRP	B	138	-58.742	45.244	33.168	1.00	53.49	B	C
ATOM	1272	NE1	TRP	B	138	-60.238	43.955	34.228	1.00	53.49	B	N
ATOM	1273	CE2	TRP	B	138	-59.737	45.238	34.147	1.00	53.49	B	C
ATOM	1274	CE3	TRP	B	138	-58.049	46.384	32.865	1.00	53.49	B	C
ATOM	1275	CZ2	TRP	B	138	-60.043	46.374	34.850	1.00	53.49	B	C
ATOM	1276	CZ3	TRP	B	138	-58.379	47.531	33.561	1.00	53.49	B	C
ATOM	1277	CH2	TRP	B	138	-59.353	47.528	34.540	1.00	53.49	B	C
ATOM	1278	N	GLN	B	139	-55.624	44.454	29.352	1.00	49.24	B	N
ATOM	1279	CA	GLN	B	139	-54.503	44.083	28.540	1.00	49.24	B	C
ATOM	1280	C	GLN	B	139	-53.356	43.939	29.492	1.00	49.24	B	C
ATOM	1281	O	GLN	B	139	-53.116	44.817	30.319	1.00	49.24	B	O
ATOM	1282	CB	GLN	B	139	-54.119	45.157	27.507	1.00	49.24	B	C
ATOM	1283	CG	GLN	B	139	-53.002	44.724	26.558	1.00	49.24	B	C
ATOM	1284	CD	GLN	B	139	-53.599	43.750	25.552	1.00	49.24	B	C
ATOM	1285	OE1	GLN	B	139	-54.728	43.924	25.096	1.00	49.24	B	O
ATOM	1286	NE2	GLN	B	139	-52.823	42.690	25.196	1.00	49.24	B	N
ATOM	1287	N	PRO	B	140	-52.657	42.839	29.427	1.00	43.32	B	N
ATOM	1288	CA	PRO	B	140	-51.574	42.581	30.339	1.00	43.32	B	C
ATOM	1289	C	PRO	B	140	-50.532	43.654	30.296	1.00	43.32	B	C
ATOM	1290	O	PRO	B	140	-49.837	43.753	29.284	1.00	43.32	B	O
ATOM	1291	CB	PRO	B	140	-50.986	41.249	29.889	1.00	43.32	B	C
ATOM	1292	CG	PRO	B	140	-51.234	41.267	28.366	1.00	43.32	B	C
ATOM	1293	CD	PRO	B	140	-52.550	42.052	28.211	1.00	43.32	B	C
ATOM	1294	N	ALA	B	141	-50.385	44.452	31.373	1.00	38.30	B	N
ATOM	1295	CA	ALA	B	141	-49.329	45.419	31.383	1.00	38.30	B	C
ATOM	1296	C	ALA	B	141	-48.033	44.686	31.491	1.00	38.30	B	C
ATOM	1297	O	ALA	B	141	-47.113	44.913	30.708	1.00	38.30	B	O
ATOM	1298	CB	ALA	B	141	-49.417	46.394	32.561	1.00	38.30	B	C
ATOM	1299	N	LEU	B	142	-47.952	43.754	32.462	1.00	34.74	B	N
ATOM	1300	CA	LEU	B	142	-46.760	42.980	32.667	1.00	34.74	B	C
ATOM	1301	C	LEU	B	142	-47.076	41.877	33.623	1.00	34.74	B	C
ATOM	1302	O	LEU	B	142	-47.966	41.999	34.464	1.00	34.74	B	O
ATOM	1303	CB	LEU	B	142	-45.586	43.757	33.289	1.00	34.74	B	C
ATOM	1304	CG	LEU	B	142	-44.932	44.803	32.370	1.00	34.74	B	C
ATOM	1305	CD1	LEU	B	142	-43.774	45.520	33.087	1.00	34.74	B	C
ATOM	1306	CD2	LEU	B	142	-44.491	44.180	31.035	1.00	34.74	B	C
ATOM	1307	N	ARG	B	143	-46.344	40.753	33.502	1.00	32.75	B	N
ATOM	1308	CA	ARG	B	143	-46.512	39.645	34.396	1.00	32.75	B	C
ATOM	1309	C	ARG	B	143	-45.144	39.257	34.856	1.00	32.75	B	C
ATOM	1310	O	ARG	B	143	-44.239	39.096	34.041	1.00	32.75	B	O
ATOM	1311	CB	ARG	B	143	-47.132	38.416	33.705	1.00	32.75	B	C
ATOM	1312	CG	ARG	B	143	-47.312	37.187	34.598	1.00	32.75	B	C
ATOM	1313	CD	ARG	B	143	-47.937	36.002	33.856	1.00	32.75	B	C
ATOM	1314	NE	ARG	B	143	-47.996	34.848	34.796	1.00	32.75	B	N
ATOM	1315	CZ	ARG	B	143	-46.978	33.939	34.821	1.00	32.75	B	C
ATOM	1316	NH1	ARG	B	143	-45.909	34.090	33.986	1.00	32.75	B	N
ATOM	1317	NH2	ARG	B	143	-47.030	32.878	35.678	1.00	32.75	B	N

Figure 10-21

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ATOM 1318  N   ARG B 144     -44.942  39.119  36.182  1.00 32.80      B    N
ATOM 1319  CA  ARG B 144     -43.639  38.712  36.618  1.00 32.80      B    C
ATOM 1320  C   ARG B 144     -43.795  37.708  37.717  1.00 32.80      B    C
ATOM 1321  O   ARG B 144     -44.446  37.971  38.727  1.00 32.80      B    O
ATOM 1322  CB  ARG B 144     -42.784  39.864  37.171  1.00 32.80      B    C
ATOM 1323  CG  ARG B 144     -41.378  39.428  37.587  1.00 32.80      B    C
ATOM 1324  CD  ARG B 144     -40.525  40.567  38.147  1.00 32.80      B    C
ATOM 1325  NE  ARG B 144     -41.105  40.938  39.467  1.00 32.80      B    N
ATOM 1326  CZ  ARG B 144     -40.455  41.826  40.275  1.00 32.80      B    C
ATOM 1327  NH1 ARG B 144     -39.272  42.376  39.873  1.00 32.80      B    N
ATOM 1328  NH2 ARG B 144     -40.990  42.162  41.484  1.00 32.80      B    N
ATOM 1329  N   GLY B 145     -43.163  36.528  37.556  1.00 35.33      B    N
ATOM 1330  CA  GLY B 145     -43.227  35.525  38.580  1.00 35.33      B    C
ATOM 1331  C   GLY B 145     -44.232  34.481  38.199  1.00 35.33      B    C
ATOM 1332  O   GLY B 145     -45.033  34.673  37.286  1.00 35.33      B    O
ATOM 1333  N   ARG B 146     -44.151  33.312  38.876  1.00 39.72      B    N
ATOM 1334  CA  ARG B 146     -45.001  32.172  38.660  1.00 39.72      B    C
ATOM 1335  C   ARG B 146     -46.414  32.405  39.104  1.00 39.72      B    C
ATOM 1336  O   ARG B 146     -47.355  32.160  38.352  1.00 39.72      B    O
ATOM 1337  CB  ARG B 146     -44.505  30.922  39.407  1.00 39.72      B    C
ATOM 1338  CG  ARG B 146     -44.432  31.115  40.923  1.00 39.72      B    C
ATOM 1339  CD  ARG B 146     -43.938  29.879  41.677  1.00 39.72      B    C
ATOM 1340  NE  ARG B 146     -43.903  30.221  43.127  1.00 39.72      B    N
ATOM 1341  CZ  ARG B 146     -42.780  30.776  43.668  1.00 39.72      B    C
ATOM 1342  NH1 ARG B 146     -41.690  31.018  42.881  1.00 39.72      B    N
ATOM 1343  NH2 ARG B 146     -42.746  31.090  44.996  1.00 39.72      B    N
ATOM 1344  N   GLY B 147     -46.611  32.911  40.335  1.00 44.41      B    N
ATOM 1345  CA  GLY B 147     -47.949  33.075  40.818  1.00 44.41      B    C
ATOM 1346  C   GLY B 147     -48.538  34.207  40.047  1.00 44.41      B    C
ATOM 1347  O   GLY B 147     -47.803  35.000  39.462  1.00 44.41      B    O
ATOM 1348  N   LEU B 148     -49.874  34.372  40.129  1.00 47.49      B    N
ATOM 1349  CA  LEU B 148     -50.540  35.431  39.420  1.00 47.49      B    C
ATOM 1350  C   LEU B 148     -50.273  35.424  37.942  1.00 47.49      B    C
ATOM 1351  O   LEU B 148     -49.181  35.737  37.473  1.00 47.49      B    O
ATOM 1352  CB  LEU B 148     -50.103  36.831  39.884  1.00 47.49      B    C
ATOM 1353  CG  LEU B 148     -50.254  37.098  41.388  1.00 47.49      B    C
ATOM 1354  CD1 LEU B 148     -49.317  36.196  42.204  1.00 47.49      B    C
ATOM 1355  CD2 LEU B 148     -50.046  38.586  41.706  1.00 47.49      B    C
ATOM 1356  N   GLN B 149     -51.279  34.956  37.172  1.00 46.88      B    N
ATOM 1357  CA  GLN B 149     -51.221  34.997  35.738  1.00 46.88      B    C
ATOM 1358  C   GLN B 149     -52.586  35.433  35.282  1.00 46.88      B    C
ATOM 1359  O   GLN B 149     -53.552  35.333  36.037  1.00 46.88      B    O
ATOM 1360  CB  GLN B 149     -50.910  33.617  35.141  1.00 46.88      B    C
ATOM 1361  CG  GLN B 149     -50.593  33.634  33.650  1.00 46.88      B    C
ATOM 1362  CD  GLN B 149     -50.183  32.221  33.266  1.00 46.88      B    C
ATOM 1363  OE1 GLN B 149     -50.102  31.339  34.118  1.00 46.88      B    O
ATOM 1364  NE2 GLN B 149     -49.913  32.001  31.951  1.00 46.88      B    N
ATOM 1365  N   ALA B 150     -52.710  35.960  34.045  1.00 45.60      B    N
ATOM 1366  CA  ALA B 150     -54.000  36.412  33.598  1.00 45.60      B    C
ATOM 1367  C   ALA B 150     -54.764  35.239  33.078  1.00 45.60      B    C
ATOM 1368  O   ALA B 150     -54.268  34.460  32.265  1.00 45.60      B    O
ATOM 1369  CB  ALA B 150     -53.932  37.464  32.477  1.00 45.60      B    C
ATOM 1370  N   GLN B 151     -56.026  35.107  33.528  1.00 44.75      B    N
ATOM 1371  CA  GLN B 151     -56.862  34.022  33.113  1.00 44.75      B    C
ATOM 1372  C   GLN B 151     -57.753  34.579  32.059  1.00 44.75      B    C
ATOM 1373  O   GLN B 151     -57.284  35.003  31.004  1.00 44.75      B    O
ATOM 1374  CB  GLN B 151     -57.744  33.456  34.239  1.00 44.75      B    C
ATOM 1375  CG  GLN B 151     -58.554  32.233  33.804  1.00 44.75      B    C
ATOM 1376  CD  GLN B 151     -59.377  31.757  34.991  1.00 44.75      B    C
ATOM 1377  OE1 GLN B 151     -60.557  31.439  34.851  1.00 44.75      B    O
ATOM 1378  NE2 GLN B 151     -58.740  31.690  36.190  1.00 44.75      B    N
ATOM 1379  N   GLY B 152     -59.076  34.565  32.293  1.00 44.25      B    N
ATOM 1380  CA  GLY B 152     -59.915  35.133  31.287  1.00 44.25      B    C
ATOM 1381  C   GLY B 152     -60.382  36.457  31.790  1.00 44.25      B    C
ATOM 1382  O   GLY B 152     -61.419  36.551  32.446  1.00 44.25      B    O
ATOM 1383  N   TYR B 153     -59.636  37.531  31.455  1.00 46.47      B    N
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Figure 10-22

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ATOM 1384  CA  TYR B 153     -60.046  38.845  31.859  1.00 46.47      B     C
ATOM 1385  C   TYR B 153     -59.875  39.022  33.356  1.00 46.47      B     C
ATOM 1386  O   TYR B 153     -60.104  40.098  33.912  1.00 46.47      B     O
ATOM 1387  CB  TYR B 153     -61.521  39.076  31.392  1.00 46.47      B     C
ATOM 1388  CG  TYR B 153     -62.196  40.100  32.232  1.00 46.47      B     C
ATOM 1389  CD1 TYR B 153     -62.061  41.449  32.003  1.00 46.47      B     C
ATOM 1390  CD2 TYR B 153     -62.940  39.671  33.307  1.00 46.47      B     C
ATOM 1391  CE1 TYR B 153     -62.683  42.349  32.838  1.00 46.47      B     C
ATOM 1392  CE2 TYR B 153     -63.561  40.565  34.141  1.00 46.47      B     C
ATOM 1393  CZ  TYR B 153     -63.431  41.910  33.904  1.00 46.47      B     C
ATOM 1394  OH  TYR B 153     -64.062  42.832  34.762  1.00 46.47      B     O
ATOM 1395  N   GLY B 154     -59.346  38.011  34.064  1.00 48.14      B     N
ATOM 1396  CA  GLY B 154     -59.248  38.202  35.484  1.00 48.14      B     C
ATOM 1397  C   GLY B 154     -57.910  37.714  35.936  1.00 48.14      B     C
ATOM 1398  O   GLY B 154     -57.210  37.021  35.198  1.00 48.14      B     O
ATOM 1399  N   VAL B 155     -57.510  38.056  37.182  1.00 50.13      B     N
ATOM 1400  CA  VAL B 155     -56.214  37.600  37.581  1.00 50.13      B     C
ATOM 1401  C   VAL B 155     -56.393  36.312  38.322  1.00 50.13      B     C
ATOM 1402  O   VAL B 155     -57.260  36.190  39.190  1.00 50.13      B     O
ATOM 1403  CB  VAL B 155     -55.445  38.540  38.457  1.00 50.13      B     C
ATOM 1404  CG1 VAL B 155     -54.097  37.859  38.763  1.00 50.13      B     C
ATOM 1405  CG2 VAL B 155     -55.315  39.903  37.752  1.00 50.13      B     C
ATOM 1406  N   ARG B 156     -55.561  35.307  37.988  1.00 52.84      B     N
ATOM 1407  CA  ARG B 156     -55.694  34.020  38.607  1.00 52.84      B     C
ATOM 1408  C   ARG B 156     -54.551  33.830  39.551  1.00 52.84      B     C
ATOM 1409  O   ARG B 156     -53.400  34.082  39.197  1.00 52.84      B     O
ATOM 1410  CB  ARG B 156     -55.633  32.849  37.608  1.00 52.84      B     C
ATOM 1411  CG  ARG B 156     -54.309  32.771  36.847  1.00 52.84      B     C
ATOM 1412  CD  ARG B 156     -54.184  31.549  35.935  1.00 52.84      B     C
ATOM 1413  NE  ARG B 156     -55.012  31.798  34.722  1.00 52.84      B     N
ATOM 1414  CZ  ARG B 156     -54.849  31.012  33.617  1.00 52.84      B     C
ATOM 1415  NH1 ARG B 156     -53.930  30.003  33.626  1.00 52.84      B     N
ATOM 1416  NH2 ARG B 156     -55.603  31.237  32.501  1.00 52.84      B     N
ATOM 1417  N   ILE B 157     -54.823  33.362  40.790  1.00 52.18      B     N
ATOM 1418  CA  ILE B 157     -53.690  33.168  41.647  1.00 52.18      B     C
ATOM 1419  C   ILE B 157     -53.260  31.739  41.654  1.00 52.18      B     C
ATOM 1420  O   ILE B 157     -54.034  30.821  41.912  1.00 52.18      B     O
ATOM 1421  CB  ILE B 157     -53.748  33.718  43.053  1.00 52.18      B     C
ATOM 1422  CG1 ILE B 157     -54.937  33.197  43.861  1.00 52.18      B     C
ATOM 1423  CG2 ILE B 157     -53.718  35.250  42.941  1.00 52.18      B     C
ATOM 1424  CD1 ILE B 157     -56.226  33.895  43.458  1.00 52.18      B     C
ATOM 1425  N   GLN B 158     -51.994  31.549  41.227  1.00 47.14      B     N
ATOM 1426  CA  GLN B 158     -51.284  30.306  41.126  1.00 47.14      B     C
ATOM 1427  C   GLN B 158     -50.820  29.792  42.457  1.00 47.14      B     C
ATOM 1428  O   GLN B 158     -50.804  28.584  42.683  1.00 47.14      B     O
ATOM 1429  CB  GLN B 158     -50.037  30.423  40.234  1.00 47.14      B     C
ATOM 1430  CG  GLN B 158     -50.354  30.730  38.769  1.00 47.14      B     C
ATOM 1431  CD  GLN B 158     -50.931  29.470  38.141  1.00 47.14      B     C
ATOM 1432  OE1 GLN B 158     -51.376  29.479  36.994  1.00 47.14      B     O
ATOM 1433  NE2 GLN B 158     -50.922  28.350  38.914  1.00 47.14      B     N
ATOM 1434  N   ASP B 159     -50.373  30.687  43.362  1.00 40.20      B     N
ATOM 1435  CA  ASP B 159     -49.846  30.211  44.612  1.00 40.20      B     C
ATOM 1436  C   ASP B 159     -50.521  30.930  45.737  1.00 40.20      B     C
ATOM 1437  O   ASP B 159     -50.539  32.158  45.786  1.00 40.20      B     O
ATOM 1438  CB  ASP B 159     -48.328  30.418  44.747  1.00 40.20      B     C
ATOM 1439  CG  ASP B 159     -48.041  31.907  44.683  1.00 40.20      B     C
ATOM 1440  OD1 ASP B 159     -48.629  32.593  43.802  1.00 40.20      B     O
ATOM 1441  OD2 ASP B 159     -47.226  32.376  45.522  1.00 40.20      B     O
ATOM 1442  N   ALA B 160     -51.086  30.167  46.693  1.00 33.14      B     N
ATOM 1443  CA  ALA B 160     -51.784  30.778  47.787  1.00 33.14      B     C
ATOM 1444  C   ALA B 160     -50.795  31.564  48.587  1.00 33.14      B     C
ATOM 1445  O   ALA B 160     -49.635  31.176  48.717  1.00 33.14      B     O
ATOM 1446  CB  ALA B 160     -52.454  29.768  48.735  1.00 33.14      B     C
ATOM 1447  N   GLY B 161     -51.241  32.711  49.141  1.00 29.02      B     N
ATOM 1448  CA  GLY B 161     -50.359  33.536  49.913  1.00 29.02      B     C
ATOM 1449  C   GLY B 161     -51.049  34.843  50.161  1.00 29.02      B     C
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Figure 10-23

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ATOM 1450  O   GLY B 161     -52.254  34.970  49.956  1.00 29.02      B    O
ATOM 1451  N   VAL B 162     -50.283  35.856  50.617  1.00 31.57      B    N
ATOM 1452  CA  VAL B 162     -50.846  37.143  50.916  1.00 31.57      B    C
ATOM 1453  C   VAL B 162     -50.592  38.041  49.747  1.00 31.57      B    C
ATOM 1454  O   VAL B 162     -49.505  38.036  49.173  1.00 31.57      B    O
ATOM 1455  CB  VAL B 162     -50.222  37.791  52.114  1.00 31.57      B    C
ATOM 1456  CG1 VAL B 162     -48.729  38.006  51.818  1.00 31.57      B    C
ATOM 1457  CG2 VAL B 162     -50.986  39.090  52.424  1.00 31.57      B    C
ATOM 1458  N   TYR B 163     -51.611  38.832  49.352  1.00 36.28      B    N
ATOM 1459  CA  TYR B 163     -51.452  39.685  48.211  1.00 36.28      B    C
ATOM 1460  C   TYR B 163     -51.936  41.069  48.504  1.00 36.28      B    C
ATOM 1461  O   TYR B 163     -52.909  41.272  49.230  1.00 36.28      B    O
ATOM 1462  CB  TYR B 163     -52.275  39.237  46.995  1.00 36.28      B    C
ATOM 1463  CG  TYR B 163     -51.684  37.984  46.468  1.00 36.28      B    C
ATOM 1464  CD1 TYR B 163     -51.966  36.764  47.040  1.00 36.28      B    C
ATOM 1465  CD2 TYR B 163     -50.844  38.045  45.386  1.00 36.28      B    C
ATOM 1466  CE1 TYR B 163     -51.411  35.612  46.534  1.00 36.28      B    C
ATOM 1467  CE2 TYR B 163     -50.291  36.900  44.882  1.00 36.28      B    C
ATOM 1468  CZ  TYR B 163     -50.567  35.684  45.452  1.00 36.28      B    C
ATOM 1469  OH  TYR B 163     -49.985  34.520  44.914  1.00 36.28      B    O
ATOM 1470  N   LEU B 164     -51.238  42.066  47.924  1.00 39.72      B    N
ATOM 1471  CA  LEU B 164     -51.690  43.423  47.983  1.00 39.72      B    C
ATOM 1472  C   LEU B 164     -52.401  43.608  46.681  1.00 39.72      B    C
ATOM 1473  O   LEU B 164     -51.822  43.408  45.615  1.00 39.72      B    O
ATOM 1474  CB  LEU B 164     -50.550  44.456  48.062  1.00 39.72      B    C
ATOM 1475  CG  LEU B 164     -51.015  45.925  48.092  1.00 39.72      B    C
ATOM 1476  CD1 LEU B 164     -51.825  46.236  49.360  1.00 39.72      B    C
ATOM 1477  CD2 LEU B 164     -49.832  46.887  47.883  1.00 39.72      B    C
ATOM 1478  N   LEU B 165     -53.695  43.966  46.748  1.00 44.09      B    N
ATOM 1479  CA  LEU B 165     -54.527  44.085  45.585  1.00 44.09      B    C
ATOM 1480  C   LEU B 165     -54.992  45.497  45.443  1.00 44.09      B    C
ATOM 1481  O   LEU B 165     -55.480  46.094  46.401  1.00 44.09      B    O
ATOM 1482  CB  LEU B 165     -55.779  43.203  45.730  1.00 44.09      B    C
ATOM 1483  CG  LEU B 165     -56.922  43.482  44.741  1.00 44.09      B    C
ATOM 1484  CD1 LEU B 165     -56.483  43.394  43.273  1.00 44.09      B    C
ATOM 1485  CD2 LEU B 165     -58.121  42.579  45.077  1.00 44.09      B    C
ATOM 1486  N   TYR B 166     -54.831  46.085  44.238  1.00 45.50      B    N
ATOM 1487  CA  TYR B 166     -55.358  47.404  44.042  1.00 45.50      B    C
ATOM 1488  C   TYR B 166     -55.978  47.535  42.685  1.00 45.50      B    C
ATOM 1489  O   TYR B 166     -55.612  46.835  41.742  1.00 45.50      B    O
ATOM 1490  CB  TYR B 166     -54.372  48.565  44.304  1.00 45.50      B    C
ATOM 1491  CG  TYR B 166     -53.086  48.380  43.574  1.00 45.50      B    C
ATOM 1492  CD1 TYR B 166     -52.095  47.602  44.128  1.00 45.50      B    C
ATOM 1493  CD2 TYR B 166     -52.855  48.996  42.366  1.00 45.50      B    C
ATOM 1494  CE1 TYR B 166     -50.897  47.426  43.481  1.00 45.50      B    C
ATOM 1495  CE2 TYR B 166     -51.657  48.824  41.714  1.00 45.50      B    C
ATOM 1496  CZ  TYR B 166     -50.676  48.037  42.271  1.00 45.50      B    C
ATOM 1497  OH  TYR B 166     -49.446  47.860  41.604  1.00 45.50      B    O
ATOM 1498  N   SER B 167     -56.989  48.426  42.577  1.00 46.49      B    N
ATOM 1499  CA  SER B 167     -57.651  48.632  41.318  1.00 46.49      B    C
ATOM 1500  C   SER B 167     -58.149  50.042  41.257  1.00 46.49      B    C
ATOM 1501  O   SER B 167     -58.624  50.591  42.251  1.00 46.49      B    O
ATOM 1502  CB  SER B 167     -58.873  47.721  41.109  1.00 46.49      B    C
ATOM 1503  OG  SER B 167     -59.887  48.044  42.050  1.00 46.49      B    O
ATOM 1504  N   GLN B 168     -58.061  50.658  40.060  1.00 49.22      B    N
ATOM 1505  CA  GLN B 168     -58.504  52.012  39.905  1.00 49.22      B    C
ATOM 1506  C   GLN B 168     -59.168  52.137  38.569  1.00 49.22      B    C
ATOM 1507  O   GLN B 168     -58.745  51.523  37.589  1.00 49.22      B    O
ATOM 1508  CB  GLN B 168     -57.341  53.012  39.941  1.00 49.22      B    C
ATOM 1509  CG  GLN B 168     -57.747  54.477  39.788  1.00 49.22      B    C
ATOM 1510  CD  GLN B 168     -56.462  55.288  39.848  1.00 49.22      B    C
ATOM 1511  OE1 GLN B 168     -55.625  55.192  38.956  1.00 49.22      B    O
ATOM 1512  NE2 GLN B 168     -56.287  56.093  40.931  1.00 49.22      B    N
ATOM 1513  N   VAL B 169     -60.249  52.940  38.506  1.00 51.74      B    N
ATOM 1514  CA  VAL B 169     -60.949  53.147  37.271  1.00 51.74      B    C
ATOM 1515  C   VAL B 169     -61.395  54.575  37.228  1.00 51.74      B    C
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Figure 10-24

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ATOM 1516  O   VAL B 169     -61.778  55.147  38.247  1.00 51.74      B    O
ATOM 1517  CB  VAL B 169     -62.161  52.274  37.157  1.00 51.74      B    C
ATOM 1518  CG1 VAL B 169     -62.940  52.387  38.475  1.00 51.74      B    C
ATOM 1519  CG2 VAL B 169     -62.978  52.712  35.928  1.00 51.74      B    C
ATOM 1520  N   LEU B 170     -61.361  55.189  36.028  1.00 56.37      B    N
ATOM 1521  CA  LEU B 170     -61.743  56.566  35.903  1.00 56.37      B    C
ATOM 1522  C   LEU B 170     -63.172  56.580  35.451  1.00 56.37      B    C
ATOM 1523  O   LEU B 170     -63.496  56.095  34.368  1.00 56.37      B    O
ATOM 1524  CB  LEU B 170     -60.889  57.315  34.859  1.00 56.37      B    C
ATOM 1525  CG  LEU B 170     -61.095  58.843  34.797  1.00 56.37      B    C
ATOM 1526  CD1 LEU B 170     -62.507  59.224  34.334  1.00 56.37      B    C
ATOM 1527  CD2 LEU B 170     -60.692  59.513  36.120  1.00 56.37      B    C
ATOM 1528  N   PHE B 171     -64.069  57.157  36.275  1.00 60.65      B    N
ATOM 1529  CA  PHE B 171     -65.463  57.155  35.937  1.00 60.65      B    C
ATOM 1530  C   PHE B 171     -65.809  58.436  35.235  1.00 60.65      B    C
ATOM 1531  O   PHE B 171     -65.624  59.527  35.773  1.00 60.65      B    O
ATOM 1532  CB  PHE B 171     -66.389  57.041  37.159  1.00 60.65      B    C
ATOM 1533  CG  PHE B 171     -66.149  55.713  37.791  1.00 60.65      B    C
ATOM 1534  CD1 PHE B 171     -66.672  54.570  37.232  1.00 60.65      B    C
ATOM 1535  CD2 PHE B 171     -65.413  55.613  38.948  1.00 60.65      B    C
ATOM 1536  CE1 PHE B 171     -66.455  53.343  37.814  1.00 60.65      B    C
ATOM 1537  CE2 PHE B 171     -65.193  54.390  39.536  1.00 60.65      B    C
ATOM 1538  CZ  PHE B 171     -65.716  53.253  38.968  1.00 60.65      B    C
ATOM 1539  N   GLN B 172     -66.211  58.307  33.953  1.00 67.06      B    N
ATOM 1540  CA  GLN B 172     -66.705  59.351  33.091  1.00 67.06      B    C
ATOM 1541  C   GLN B 172     -68.180  59.576  33.268  1.00 67.06      B    C
ATOM 1542  O   GLN B 172     -68.711  60.567  32.779  1.00 67.06      B    O
ATOM 1543  CB  GLN B 172     -66.427  59.126  31.590  1.00 67.06      B    C
ATOM 1544  CG  GLN B 172     -67.195  57.976  30.946  1.00 67.06      B    C
ATOM 1545  CD  GLN B 172     -66.796  57.909  29.479  1.00 67.06      B    C
ATOM 1546  OE1 GLN B 172     -65.745  58.411  29.084  1.00 67.06      B    O
ATOM 1547  NE2 GLN B 172     -67.659  57.268  28.645  1.00 67.06      B    N
ATOM 1548  N   ASP B 173     -68.893  58.597  33.861  1.00 71.27      B    N
ATOM 1549  CA  ASP B 173     -70.332  58.571  33.990  1.00 71.27      B    C
ATOM 1550  C   ASP B 173     -70.840  59.677  34.884  1.00 71.27      B    C
ATOM 1551  O   ASP B 173     -70.212  60.057  35.871  1.00 71.27      B    O
ATOM 1552  CB  ASP B 173     -70.811  57.221  34.570  1.00 71.27      B    C
ATOM 1553  CG  ASP B 173     -72.289  56.968  34.291  1.00 71.27      B    C
ATOM 1554  OD1 ASP B 173     -73.122  57.891  34.481  1.00 71.27      B    O
ATOM 1555  OD2 ASP B 173     -72.608  55.816  33.896  1.00 71.27      B    O
ATOM 1556  N   VAL B 174     -72.000  60.245  34.485  1.00 71.57      B    N
ATOM 1557  CA  VAL B 174     -72.782  61.294  35.090  1.00 71.57      B    C
ATOM 1558  C   VAL B 174     -73.563  60.833  36.296  1.00 71.57      B    C
ATOM 1559  O   VAL B 174     -73.940  61.653  37.131  1.00 71.57      B    O
ATOM 1560  CB  VAL B 174     -73.758  61.871  34.108  1.00 71.57      B    C
ATOM 1561  CG1 VAL B 174     -74.651  62.910  34.804  1.00 71.57      B    C
ATOM 1562  CG2 VAL B 174     -72.951  62.433  32.928  1.00 71.57      B    C
ATOM 1563  N   THR B 175     -73.863  59.521  36.395  1.00 70.41      B    N
ATOM 1564  CA  THR B 175     -74.713  58.933  37.402  1.00 70.41      B    C
ATOM 1565  C   THR B 175     -74.357  59.483  38.744  1.00 70.41      B    C
ATOM 1566  O   THR B 175     -73.233  59.922  38.976  1.00 70.41      B    O
ATOM 1567  CB  THR B 175     -74.514  57.453  37.521  1.00 70.41      B    C
ATOM 1568  OG1 THR B 175     -74.659  56.828  36.262  1.00 70.41      B    O
ATOM 1569  CG2 THR B 175     -75.573  56.892  38.472  1.00 70.41      B    C
ATOM 1570  N   PHE B 176     -75.321  59.433  39.685  1.00 61.11      B    N
ATOM 1571  CA  PHE B 176     -75.123  60.020  40.972  1.00 61.11      B    C
ATOM 1572  C   PHE B 176     -73.896  59.434  41.590  1.00 61.11      B    C
ATOM 1573  O   PHE B 176     -73.067  60.173  42.119  1.00 61.11      B    O
ATOM 1574  CB  PHE B 176     -76.321  59.817  41.917  1.00 61.11      B    C
ATOM 1575  CG  PHE B 176     -76.586  58.358  42.053  1.00 61.11      B    C
ATOM 1576  CD1 PHE B 176     -77.360  57.701  41.125  1.00 61.11      B    C
ATOM 1577  CD2 PHE B 176     -76.066  57.649  43.109  1.00 61.11      B    C
ATOM 1578  CE1 PHE B 176     -77.613  56.355  41.246  1.00 61.11      B    C
ATOM 1579  CE2 PHE B 176     -76.317  56.302  43.235  1.00 61.11      B    C
ATOM 1580  CZ  PHE B 176     -77.090  55.652  42.304  1.00 61.11      B    C
ATOM 1581  N   THR B 177     -73.725  58.100  41.549  1.00 51.28      B    N
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Figure 10-25

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ATOM 1582  CA  THR B 177     -72.509  57.585  42.111  1.00 51.28      B     C
ATOM 1583  C   THR B 177     -72.005  56.468  41.253  1.00 51.28      B     C
ATOM 1584  O   THR B 177     -72.778  55.765  40.604  1.00 51.28      B     O
ATOM 1585  CB  THR B 177     -72.668  57.027  43.494  1.00 51.28      B     C
ATOM 1586  OG1 THR B 177     -71.393  56.805  44.080  1.00 51.28      B     O
ATOM 1587  CG2 THR B 177     -73.437  55.700  43.402  1.00 51.28      B     C
ATOM 1588  N   MET B 178     -70.670  56.279  41.239  1.00 42.34      B     N
ATOM 1589  CA  MET B 178     -70.085  55.219  40.466  1.00 42.34      B     C
ATOM 1590  C   MET B 178     -69.042  54.570  41.323  1.00 42.34      B     C
ATOM 1591  O   MET B 178     -68.633  55.127  42.339  1.00 42.34      B     O
ATOM 1592  CB  MET B 178     -69.396  55.704  39.178  1.00 42.34      B     C
ATOM 1593  CG  MET B 178     -70.372  56.276  38.147  1.00 42.34      B     C
ATOM 1594  SD  MET B 178     -71.527  55.059  37.447  1.00 42.34      B     S
ATOM 1595  CE  MET B 178     -70.311  54.291  36.340  1.00 42.34      B     C
ATOM 1596  N   GLY B 179     -68.601  53.349  40.952  1.00 35.34      B     N
ATOM 1597  CA  GLY B 179     -67.600  52.689  41.742  1.00 35.34      B     C
ATOM 1598  C   GLY B 179     -67.404  51.302  41.217  1.00 35.34      B     C
ATOM 1599  O   GLY B 179     -68.130  50.846  40.334  1.00 35.34      B     O
ATOM 1600  N   GLN B 180     -66.399  50.585  41.766  1.00 34.51      B     N
ATOM 1601  CA  GLN B 180     -66.125  49.261  41.290  1.00 34.51      B     C
ATOM 1602  C   GLN B 180     -65.895  48.361  42.457  1.00 34.51      B     C
ATOM 1603  O   GLN B 180     -65.685  48.808  43.584  1.00 34.51      B     O
ATOM 1604  CB  GLN B 180     -64.874  49.197  40.398  1.00 34.51      B     C
ATOM 1605  CG  GLN B 180     -63.585  49.572  41.131  1.00 34.51      B     C
ATOM 1606  CD  GLN B 180     -62.449  49.574  40.119  1.00 34.51      B     C
ATOM 1607  OE1 GLN B 180     -61.284  49.757  40.470  1.00 34.51      B     O
ATOM 1608  NE2 GLN B 180     -62.795  49.368  38.820  1.00 34.51      B     N
ATOM 1609  N   VAL B 181     -65.963  47.040  42.207  1.00 37.80      B     N
ATOM 1610  CA  VAL B 181     -65.733  46.105  43.263  1.00 37.80      B     C
ATOM 1611  C   VAL B 181     -64.602  45.226  42.849  1.00 37.80      B     C
ATOM 1612  O   VAL B 181     -64.559  44.733  41.721  1.00 37.80      B     O
ATOM 1613  CB  VAL B 181     -66.912  45.218  43.538  1.00 37.80      B     C
ATOM 1614  CG1 VAL B 181     -68.079  46.094  44.024  1.00 37.80      B     C
ATOM 1615  CG2 VAL B 181     -67.231  44.413  42.266  1.00 37.80      B     C
ATOM 1616  N   VAL B 182     -63.622  45.037  43.751  1.00 42.17      B     N
ATOM 1617  CA  VAL B 182     -62.601  44.092  43.433  1.00 42.17      B     C
ATOM 1618  C   VAL B 182     -63.053  42.858  44.139  1.00 42.17      B     C
ATOM 1619  O   VAL B 182     -63.133  42.809  45.366  1.00 42.17      B     O
ATOM 1620  CB  VAL B 182     -61.212  44.496  43.852  1.00 42.17      B     C
ATOM 1621  CG1 VAL B 182     -61.116  44.650  45.381  1.00 42.17      B     C
ATOM 1622  CG2 VAL B 182     -60.244  43.472  43.242  1.00 42.17      B     C
ATOM 1623  N   SER B 183     -63.392  41.812  43.367  1.00 45.27      B     N
ATOM 1624  CA  SER B 183     -63.994  40.679  44.004  1.00 45.27      B     C
ATOM 1625  C   SER B 183     -63.137  39.471  43.848  1.00 45.27      B     C
ATOM 1626  O   SER B 183     -62.236  39.424  43.011  1.00 45.27      B     O
ATOM 1627  CB  SER B 183     -65.381  40.331  43.434  1.00 45.27      B     C
ATOM 1628  OG  SER B 183     -66.289  41.396  43.672  1.00 45.27      B     O
ATOM 1629  N   ARG B 184     -63.392  38.455  44.701  1.00 48.52      B     N
ATOM 1630  CA  ARG B 184     -62.639  37.248  44.572  1.00 48.52      B     C
ATOM 1631  C   ARG B 184     -63.565  36.134  44.226  1.00 48.52      B     C
ATOM 1632  O   ARG B 184     -64.594  35.935  44.870  1.00 48.52      B     O
ATOM 1633  CB  ARG B 184     -61.861  36.807  45.827  1.00 48.52      B     C
ATOM 1634  CG  ARG B 184     -62.717  36.456  47.041  1.00 48.52      B     C
ATOM 1635  CD  ARG B 184     -61.883  36.190  48.295  1.00 48.52      B     C
ATOM 1636  NE  ARG B 184     -61.175  34.890  48.121  1.00 48.52      B     N
ATOM 1637  CZ  ARG B 184     -61.742  33.752  48.615  1.00 48.52      B     C
ATOM 1638  NH1 ARG B 184     -62.968  33.811  49.212  1.00 48.52      B     N
ATOM 1639  NH2 ARG B 184     -61.085  32.560  48.523  1.00 48.52      B     N
ATOM 1640  N   GLU B 185     -63.215  35.385  43.164  1.00 48.59      B     N
ATOM 1641  CA  GLU B 185     -63.974  34.220  42.831  1.00 48.59      B     C
ATOM 1642  C   GLU B 185     -63.236  33.129  43.511  1.00 48.59      B     C
ATOM 1643  O   GLU B 185     -62.152  32.730  43.085  1.00 48.59      B     O
ATOM 1644  CB  GLU B 185     -64.003  33.897  41.326  1.00 48.59      B     C
ATOM 1645  CG  GLU B 185     -64.781  34.921  40.500  1.00 48.59      B     C
ATOM 1646  CD  GLU B 185     -66.246  34.835  40.905  1.00 48.59      B     C
ATOM 1647  OE1 GLU B 185     -66.564  34.010  41.802  1.00 48.59      B     O
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Figure 10-26

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ATOM 1648  OE2 GLU B 185     -67.066  35.595  40.324  1.00 48.59      B     O
ATOM 1649  N   GLY B 186     -63.811  32.616  44.607  1.00 50.68      B     N
ATOM 1650  CA  GLY B 186     -63.070  31.657  45.352  1.00 50.68      B     C
ATOM 1651  C   GLY B 186     -63.229  30.318  44.750  1.00 50.68      B     C
ATOM 1652  O   GLY B 186     -64.131  30.053  43.955  1.00 50.68      B     O
ATOM 1653  N   GLN B 187     -62.339  29.411  45.197  1.00 55.20      B     N
ATOM 1654  CA  GLN B 187     -62.491  28.030  44.892  1.00 55.20      B     C
ATOM 1655  C   GLN B 187     -63.788  27.764  45.575  1.00 55.20      B     C
ATOM 1656  O   GLN B 187     -64.605  26.964  45.125  1.00 55.20      B     O
ATOM 1657  CB  GLN B 187     -61.421  27.133  45.539  1.00 55.20      B     C
ATOM 1658  CG  GLN B 187     -61.469  27.113  47.069  1.00 55.20      B     C
ATOM 1659  CD  GLN B 187     -60.912  28.433  47.579  1.00 55.20      B     C
ATOM 1660  OE1 GLN B 187     -59.781  28.803  47.271  1.00 55.20      B     O
ATOM 1661  NE2 GLN B 187     -61.728  29.169  48.380  1.00 55.20      B     N
ATOM 1662  N   GLY B 188     -63.978  28.486  46.702  1.00 56.44      B     N
ATOM 1663  CA  GLY B 188     -65.193  28.545  47.450  1.00 56.44      B     C
ATOM 1664  C   GLY B 188     -66.058  29.581  46.763  1.00 56.44      B     C
ATOM 1665  O   GLY B 188     -66.122  29.605  45.536  1.00 56.44      B     O
ATOM 1666  N   ARG B 189     -66.759  30.454  47.531  1.00 56.19      B     N
ATOM 1667  CA  ARG B 189     -67.697  31.422  46.995  1.00 56.19      B     C
ATOM 1668  C   ARG B 189     -67.022  32.711  46.582  1.00 56.19      B     C
ATOM 1669  O   ARG B 189     -65.827  32.909  46.800  1.00 56.19      B     O
ATOM 1670  CB  ARG B 189     -68.824  31.771  47.987  1.00 56.19      B     C
ATOM 1671  CG  ARG B 189     -69.979  32.565  47.371  1.00 56.19      B     C
ATOM 1672  CD  ARG B 189     -71.120  32.855  48.351  1.00 56.19      B     C
ATOM 1673  NE  ARG B 189     -70.692  33.982  49.226  1.00 56.19      B     N
ATOM 1674  CZ  ARG B 189     -70.906  35.271  48.829  1.00 56.19      B     C
ATOM 1675  NH1 ARG B 189     -71.511  35.524  47.633  1.00 56.19      B     N
ATOM 1676  NH2 ARG B 189     -70.515  36.305  49.629  1.00 56.19      B     N
ATOM 1677  N   GLN B 190     -67.796  33.613  45.921  1.00 52.24      B     N
ATOM 1678  CA  GLN B 190     -67.308  34.885  45.446  1.00 52.24      B     C
ATOM 1679  C   GLN B 190     -67.723  35.959  46.401  1.00 52.24      B     C
ATOM 1680  O   GLN B 190     -68.865  36.004  46.852  1.00 52.24      B     O
ATOM 1681  CB  GLN B 190     -67.829  35.258  44.043  1.00 52.24      B     C
ATOM 1682  CG  GLN B 190     -69.343  35.475  43.960  1.00 52.24      B     C
ATOM 1683  CD  GLN B 190     -69.655  36.905  44.384  1.00 52.24      B     C
ATOM 1684  OE1 GLN B 190     -70.582  37.151  45.155  1.00 52.24      B     O
ATOM 1685  NE2 GLN B 190     -68.864  37.879  43.861  1.00 52.24      B     N
ATOM 1686  N   GLU B 191     -66.774  36.852  46.747  1.00 45.63      B     N
ATOM 1687  CA  GLU B 191     -67.064  37.931  47.648  1.00 45.63      B     C
ATOM 1688  C   GLU B 191     -66.290  39.118  47.171  1.00 45.63      B     C
ATOM 1689  O   GLU B 191     -65.360  38.978  46.379  1.00 45.63      B     O
ATOM 1690  CB  GLU B 191     -66.643  37.644  49.099  1.00 45.63      B     C
ATOM 1691  CG  GLU B 191     -67.098  38.706  50.101  1.00 45.63      B     C
ATOM 1692  CD  GLU B 191     -66.611  38.281  51.480  1.00 45.63      B     C
ATOM 1693  OE1 GLU B 191     -65.808  37.313  51.551  1.00 45.63      B     O
ATOM 1694  OE2 GLU B 191     -67.036  38.917  52.482  1.00 45.63      B     O
ATOM 1695  N   THR B 192     -66.658  40.330  47.634  1.00 41.18      B     N
ATOM 1696  CA  THR B 192     -65.947  41.494  47.187  1.00 41.18      B     C
ATOM 1697  C   THR B 192     -65.006  41.900  48.275  1.00 41.18      B     C
ATOM 1698  O   THR B 192     -65.418  42.177  49.400  1.00 41.18      B     O
ATOM 1699  CB  THR B 192     -66.826  42.679  46.907  1.00 41.18      B     C
ATOM 1700  OG1 THR B 192     -67.432  43.141  48.106  1.00 41.18      B     O
ATOM 1701  CG2 THR B 192     -67.908  42.261  45.896  1.00 41.18      B     C
ATOM 1702  N   LEU B 193     -63.694  41.893  47.965  1.00 40.86      B     N
ATOM 1703  CA  LEU B 193     -62.694  42.250  48.927  1.00 40.86      B     C
ATOM 1704  C   LEU B 193     -62.767  43.711  49.249  1.00 40.86      B     C
ATOM 1705  O   LEU B 193     -62.862  44.089  50.416  1.00 40.86      B     O
ATOM 1706  CB  LEU B 193     -61.269  41.960  48.424  1.00 40.86      B     C
ATOM 1707  CG  LEU B 193     -60.992  40.462  48.188  1.00 40.86      B     C
ATOM 1708  CD1 LEU B 193     -61.905  39.884  47.096  1.00 40.86      B     C
ATOM 1709  CD2 LEU B 193     -59.506  40.209  47.895  1.00 40.86      B     C
ATOM 1710  N   PHE B 194     -62.755  44.577  48.213  1.00 41.35      B     N
ATOM 1711  CA  PHE B 194     -62.752  45.986  48.484  1.00 41.35      B     C
ATOM 1712  C   PHE B 194     -63.587  46.642  47.430  1.00 41.35      B     C
ATOM 1713  O   PHE B 194     -63.783  46.086  46.351  1.00 41.35      B     O
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Figure 10-27

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ATOM 1714  CB  PHE B 194     -61.352  46.615  48.382  1.00 41.35      B    C
ATOM 1715  CG  PHE B 194     -60.450  45.847  49.290  1.00 41.35      B    C
ATOM 1716  CD1 PHE B 194     -60.375  46.139  50.631  1.00 41.35      B    C
ATOM 1717  CD2 PHE B 194     -59.688  44.816  48.789  1.00 41.35      B    C
ATOM 1718  CE1 PHE B 194     -59.541  45.421  51.456  1.00 41.35      B    C
ATOM 1719  CE2 PHE B 194     -58.851  44.096  49.608  1.00 41.35      B    C
ATOM 1720  CZ  PHE B 194     -58.778  44.397  50.946  1.00 41.35      B    C
ATOM 1721  N   ARG B 195     -64.111  47.851  47.722  1.00 42.11      B    N
ATOM 1722  CA  ARG B 195     -64.916  48.532  46.749  1.00 42.11      B    C
ATOM 1723  C   ARG B 195     -64.583  49.989  46.795  1.00 42.11      B    C
ATOM 1724  O   ARG B 195     -64.068  50.491  47.793  1.00 42.11      B    O
ATOM 1725  CB  ARG B 195     -66.429  48.382  46.988  1.00 42.11      B    C
ATOM 1726  CG  ARG B 195     -66.903  48.905  48.345  1.00 42.11      B    C
ATOM 1727  CD  ARG B 195     -68.392  48.661  48.598  1.00 42.11      B    C
ATOM 1728  NE  ARG B 195     -68.718  49.215  49.943  1.00 42.11      B    N
ATOM 1729  CZ  ARG B 195     -69.082  50.526  50.075  1.00 42.11      B    C
ATOM 1730  NH1 ARG B 195     -69.160  51.327  48.974  1.00 42.11      B    N
ATOM 1731  NH2 ARG B 195     -69.368  51.031  51.311  1.00 42.11      B    N
ATOM 1732  N   CYS B 196     -64.858  50.705  45.684  1.00 42.45      B    N
ATOM 1733  CA  CYS B 196     -64.550  52.103  45.630  1.00 42.45      B    C
ATOM 1734  C   CYS B 196     -65.806  52.784  45.171  1.00 42.45      B    C
ATOM 1735  O   CYS B 196     -66.524  52.260  44.319  1.00 42.45      B    O
ATOM 1736  CB  CYS B 196     -63.413  52.383  44.624  1.00 42.45      B    C
ATOM 1737  SG  CYS B 196     -62.443  53.879  44.976  1.00 42.45      B    S
ATOM 1738  N   ILE B 197     -66.142  53.950  45.762  1.00 39.20      B    N
ATOM 1739  CA  ILE B 197     -67.339  54.633  45.352  1.00 39.20      B    C
ATOM 1740  C   ILE B 197     -67.040  56.094  45.238  1.00 39.20      B    C
ATOM 1741  O   ILE B 197     -66.321  56.654  46.064  1.00 39.20      B    O
ATOM 1742  CB  ILE B 197     -68.472  54.488  46.323  1.00 39.20      B    C
ATOM 1743  CG1 ILE B 197     -69.775  55.031  45.712  1.00 39.20      B    C
ATOM 1744  CG2 ILE B 197     -68.062  55.180  47.634  1.00 39.20      B    C
ATOM 1745  CD1 ILE B 197     -70.271  54.221  44.515  1.00 39.20      B    C
ATOM 1746  N   ARG B 198     -67.585  56.754  44.194  1.00 37.08      B    N
ATOM 1747  CA  ARG B 198     -67.345  58.160  44.055  1.00 37.08      B    C
ATOM 1748  C   ARG B 198     -68.599  58.807  43.558  1.00 37.08      B    C
ATOM 1749  O   ARG B 198     -69.280  58.279  42.679  1.00 37.08      B    O
ATOM 1750  CB  ARG B 198     -66.233  58.494  43.046  1.00 37.08      B    C
ATOM 1751  CG  ARG B 198     -65.923  59.987  42.949  1.00 37.08      B    C
ATOM 1752  CD  ARG B 198     -65.284  60.557  44.217  1.00 37.08      B    C
ATOM 1753  NE  ARG B 198     -63.985  59.854  44.417  1.00 37.08      B    N
ATOM 1754  CZ  ARG B 198     -63.162  60.219  45.443  1.00 37.08      B    C
ATOM 1755  NH1 ARG B 198     -63.527  61.231  46.283  1.00 37.08      B    N
ATOM 1756  NH2 ARG B 198     -61.974  59.572  45.627  1.00 37.08      B    N
ATOM 1757  N   SER B 199     -68.943  59.981  44.124  1.00 34.75      B    N
ATOM 1758  CA  SER B 199     -70.105  60.677  43.659  1.00 34.75      B    C
ATOM 1759  C   SER B 199     -69.716  61.330  42.377  1.00 34.75      B    C
ATOM 1760  O   SER B 199     -68.567  61.726  42.196  1.00 34.75      B    O
ATOM 1761  CB  SER B 199     -70.597  61.779  44.613  1.00 34.75      B    C
ATOM 1762  OG  SER B 199     -71.748  62.412  44.073  1.00 34.75      B    O
ATOM 1763  N   MET B 200     -70.679  61.471  41.450  1.00 33.48      B    N
ATOM 1764  CA  MET B 200     -70.373  62.046  40.169  1.00 33.48      B    C
ATOM 1765  C   MET B 200     -71.165  63.307  40.034  1.00 33.48      B    C
ATOM 1766  O   MET B 200     -72.300  63.404  40.498  1.00 33.48      B    O
ATOM 1767  CB  MET B 200     -70.776  61.155  38.979  1.00 33.48      B    C
ATOM 1768  CG  MET B 200     -70.031  59.817  38.881  1.00 33.48      B    C
ATOM 1769  SD  MET B 200     -68.271  59.925  38.431  1.00 33.48      B    S
ATOM 1770  CE  MET B 200     -67.658  60.191  40.118  1.00 33.48      B    C
ATOM 1771  N   PRO B 201     -70.557  64.280  39.411  1.00 34.55      B    N
ATOM 1772  CA  PRO B 201     -71.191  65.546  39.158  1.00 34.55      B    C
ATOM 1773  C   PRO B 201     -72.149  65.409  38.020  1.00 34.55      B    C
ATOM 1774  O   PRO B 201     -72.121  64.385  37.338  1.00 34.55      B    O
ATOM 1775  CB  PRO B 201     -70.058  66.542  38.897  1.00 34.55      B    C
ATOM 1776  CG  PRO B 201     -68.816  65.669  38.645  1.00 34.55      B    C
ATOM 1777  CD  PRO B 201     -69.109  64.390  39.439  1.00 34.55      B    C
ATOM 1778  N   SER B 202     -72.997  66.431  37.786  1.00 35.65      B    N
ATOM 1779  CA  SER B 202     -73.982  66.338  36.751  1.00 35.65      B    C
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Figure 10-28

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ATOM 1780  C   SER B 202     -73.279  66.055  35.465  1.00 35.65      B    C
ATOM 1781  O   SER B 202     -72.057  66.158  35.377  1.00 35.65      B    O
ATOM 1782  CB  SER B 202     -74.808  67.623  36.562  1.00 35.65      B    C
ATOM 1783  OG  SER B 202     -75.756  67.444  35.520  1.00 35.65      B    O
ATOM 1784  N   HIS B 203     -74.053  65.648  34.438  1.00 37.84      B    N
ATOM 1785  CA  HIS B 203     -73.500  65.331  33.153  1.00 37.84      B    C
ATOM 1786  C   HIS B 203     -72.842  66.558  32.616  1.00 37.84      B    C
ATOM 1787  O   HIS B 203     -71.743  66.480  32.068  1.00 37.84      B    O
ATOM 1788  CB  HIS B 203     -74.554  64.861  32.129  1.00 37.84      B    C
ATOM 1789  CG  HIS B 203     -73.995  64.649  30.750  1.00 37.84      B    C
ATOM 1790  ND1 HIS B 203     -73.426  63.478  30.304  1.00 37.84      B    N
ATOM 1791  CD2 HIS B 203     -73.929  65.515  29.702  1.00 37.84      B    C
ATOM 1792  CE1 HIS B 203     -73.046  63.691  29.018  1.00 37.84      B    C
ATOM 1793  NE2 HIS B 203     -73.331  64.914  28.609  1.00 37.84      B    N
ATOM 1794  N   PRO B 204     -73.461  67.696  32.749  1.00 38.77      B    N
ATOM 1795  CA  PRO B 204     -72.821  68.887  32.278  1.00 38.77      B    C
ATOM 1796  C   PRO B 204     -71.650  69.171  33.153  1.00 38.77      B    C
ATOM 1797  O   PRO B 204     -70.826  70.008  32.791  1.00 38.77      B    O
ATOM 1798  CB  PRO B 204     -73.894  69.971  32.292  1.00 38.77      B    C
ATOM 1799  CG  PRO B 204     -75.200  69.186  32.084  1.00 38.77      B    C
ATOM 1800  CD  PRO B 204     -74.912  67.807  32.695  1.00 38.77      B    C
ATOM 1801  N   ASP B 205     -71.558  68.491  34.311  1.00 39.11      B    N
ATOM 1802  CA  ASP B 205     -70.493  68.803  35.210  1.00 39.11      B    C
ATOM 1803  C   ASP B 205     -69.258  68.060  34.830  1.00 39.11      B    C
ATOM 1804  O   ASP B 205     -68.373  67.907  35.670  1.00 39.11      B    O
ATOM 1805  CB  ASP B 205     -70.815  68.455  36.672  1.00 39.11      B    C
ATOM 1806  CG  ASP B 205     -71.842  69.457  37.179  1.00 39.11      B    C
ATOM 1807  OD1 ASP B 205     -72.144  70.425  36.432  1.00 39.11      B    O
ATOM 1808  OD2 ASP B 205     -72.331  69.272  38.326  1.00 39.11      B    O
ATOM 1809  N   ARG B 206     -69.165  67.618  33.553  1.00 38.97      B    N
ATOM 1810  CA  ARG B 206     -68.002  66.955  33.021  1.00 38.97      B    C
ATOM 1811  C   ARG B 206     -67.522  65.943  34.005  1.00 38.97      B    C
ATOM 1812  O   ARG B 206     -66.458  66.109  34.598  1.00 38.97      B    O
ATOM 1813  CB  ARG B 206     -66.841  67.919  32.719  1.00 38.97      B    C
ATOM 1814  CG  ARG B 206     -67.188  68.967  31.660  1.00 38.97      B    C
ATOM 1815  CD  ARG B 206     -67.036  68.469  30.222  1.00 38.97      B    C
ATOM 1816  NE  ARG B 206     -67.407  69.596  29.321  1.00 38.97      B    N
ATOM 1817  CZ  ARG B 206     -66.941  69.633  28.039  1.00 38.97      B    C
ATOM 1818  NH1 ARG B 206     -66.119  68.642  27.583  1.00 38.97      B    N
ATOM 1819  NH2 ARG B 206     -67.295  70.660  27.213  1.00 38.97      B    N
ATOM 1820  N   ALA B 207     -68.311  64.881  34.240  1.00 37.60      B    N
ATOM 1821  CA  ALA B 207     -67.908  63.948  35.247  1.00 37.60      B    C
ATOM 1822  C   ALA B 207     -66.574  63.384  34.887  1.00 37.60      B    C
ATOM 1823  O   ALA B 207     -66.393  62.819  33.810  1.00 37.60      B    O
ATOM 1824  CB  ALA B 207     -68.886  62.772  35.420  1.00 37.60      B    C
ATOM 1825  N   TYR B 208     -65.581  63.596  35.774  1.00 38.50      B    N
ATOM 1826  CA  TYR B 208     -64.304  62.966  35.635  1.00 38.50      B    C
ATOM 1827  C   TYR B 208     -63.831  62.661  37.020  1.00 38.50      B    C
ATOM 1828  O   TYR B 208     -63.390  63.558  37.737  1.00 38.50      B    O
ATOM 1829  CB  TYR B 208     -63.229  63.841  34.963  1.00 38.50      B    C
ATOM 1830  CG  TYR B 208     -63.587  63.994  33.523  1.00 38.50      B    C
ATOM 1831  CD1 TYR B 208     -64.453  64.979  33.111  1.00 38.50      B    C
ATOM 1832  CD2 TYR B 208     -63.051  63.147  32.579  1.00 38.50      B    C
ATOM 1833  CE1 TYR B 208     -64.783  65.120  31.785  1.00 38.50      B    C
ATOM 1834  CE2 TYR B 208     -63.376  63.281  31.250  1.00 38.50      B    C
ATOM 1835  CZ  TYR B 208     -64.244  64.269  30.851  1.00 38.50      B    C
ATOM 1836  OH  TYR B 208     -64.580  64.410  29.488  1.00 38.50      B    O
ATOM 1837  N   ASN B 209     -63.896  61.385  37.446  1.00 40.97      B    N
ATOM 1838  CA  ASN B 209     -63.420  61.082  38.762  1.00 40.97      B    C
ATOM 1839  C   ASN B 209     -62.795  59.730  38.720  1.00 40.97      B    C
ATOM 1840  O   ASN B 209     -63.384  58.780  38.211  1.00 40.97      B    O
ATOM 1841  CB  ASN B 209     -64.521  61.024  39.837  1.00 40.97      B    C
ATOM 1842  CG  ASN B 209     -64.997  62.441  40.124  1.00 40.97      B    C
ATOM 1843  OD1 ASN B 209     -66.191  62.728  40.085  1.00 40.97      B    O
ATOM 1844  ND2 ASN B 209     -64.035  63.354  40.433  1.00 40.97      B    N
ATOM 1845  N   SER B 210     -61.578  59.604  39.280  1.00 43.32      B    N
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Figure 10-29

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ATOM 1846  CA  SER B 210     -60.932  58.327  39.303  1.00 43.32      B    C
ATOM 1847  C   SER B 210     -61.100  57.807  40.693  1.00 43.32      B    C
ATOM 1848  O   SER B 210     -61.231  58.584  41.637  1.00 43.32      B    O
ATOM 1849  CB  SER B 210     -59.424  58.388  39.001  1.00 43.32      B    C
ATOM 1850  OG  SER B 210     -58.753  59.124  40.013  1.00 43.32      B    O
ATOM 1851  N   CYS B 211     -61.140  56.469  40.855  1.00 46.49      B    N
ATOM 1852  CA  CYS B 211     -61.350  55.943  42.172  1.00 46.49      B    C
ATOM 1853  C   CYS B 211     -60.326  54.862  42.364  1.00 46.49      B    C
ATOM 1854  O   CYS B 211     -60.163  53.992  41.510  1.00 46.49      B    O
ATOM 1855  CB  CYS B 211     -62.758  55.331  42.318  1.00 46.49      B    C
ATOM 1856  SG  CYS B 211     -63.425  55.357  44.010  1.00 46.49      B    S
ATOM 1857  N   TYR B 212     -59.595  54.902  43.498  1.00 44.78      B    N
ATOM 1858  CA  TYR B 212     -58.537  53.961  43.757  1.00 44.78      B    C
ATOM 1859  C   TYR B 212     -58.788  53.318  45.088  1.00 44.78      B    C
ATOM 1860  O   TYR B 212     -59.156  53.989  46.050  1.00 44.78      B    O
ATOM 1861  CB  TYR B 212     -57.179  54.688  43.836  1.00 44.78      B    C
ATOM 1862  CG  TYR B 212     -56.092  53.783  44.309  1.00 44.78      B    C
ATOM 1863  CD1 TYR B 212     -55.880  53.618  45.659  1.00 44.78      B    C
ATOM 1864  CD2 TYR B 212     -55.283  53.112  43.420  1.00 44.78      B    C
ATOM 1865  CE1 TYR B 212     -54.877  52.798  46.120  1.00 44.78      B    C
ATOM 1866  CE2 TYR B 212     -54.278  52.291  43.877  1.00 44.78      B    C
ATOM 1867  CZ  TYR B 212     -54.073  52.133  45.227  1.00 44.78      B    C
ATOM 1868  OH  TYR B 212     -53.041  51.293  45.698  1.00 44.78      B    O
ATOM 1869  N   SER B 213     -58.608  51.984  45.172  1.00 38.20      B    N
ATOM 1870  CA  SER B 213     -58.779  51.300  46.422  1.00 38.20      B    C
ATOM 1871  C   SER B 213     -57.855  50.126  46.416  1.00 38.20      B    C
ATOM 1872  O   SER B 213     -57.610  49.527  45.370  1.00 38.20      B    O
ATOM 1873  CB  SER B 213     -60.203  50.763  46.638  1.00 38.20      B    C
ATOM 1874  OG  SER B 213     -60.293  50.104  47.893  1.00 38.20      B    O
ATOM 1875  N   ALA B 214     -57.307  49.764  47.595  1.00 32.33      B    N
ATOM 1876  CA  ALA B 214     -56.398  48.656  47.650  1.00 32.33      B    C
ATOM 1877  C   ALA B 214     -56.501  48.043  49.007  1.00 32.33      B    C
ATOM 1878  O   ALA B 214     -56.993  48.664  49.947  1.00 32.33      B    O
ATOM 1879  CB  ALA B 214     -54.928  49.061  47.447  1.00 32.33      B    C
ATOM 1880  N   GLY B 215     -56.040  46.783  49.136  1.00 26.56      B    N
ATOM 1881  CA  GLY B 215     -56.097  46.126  50.408  1.00 26.56      B    C
ATOM 1882  C   GLY B 215     -55.288  44.876  50.310  1.00 26.56      B    C
ATOM 1883  O   GLY B 215     -54.796  44.518  49.240  1.00 26.56      B    O
ATOM 1884  N   VAL B 216     -55.127  44.177  51.450  1.00 26.90      B    N
ATOM 1885  CA  VAL B 216     -54.369  42.963  51.461  1.00 26.90      B    C
ATOM 1886  C   VAL B 216     -55.326  41.857  51.763  1.00 26.90      B    C
ATOM 1887  O   VAL B 216     -56.238  42.020  52.573  1.00 26.90      B    O
ATOM 1888  CB  VAL B 216     -53.306  42.945  52.521  1.00 26.90      B    C
ATOM 1889  CG1 VAL B 216     -53.988  43.033  53.896  1.00 26.90      B    C
ATOM 1890  CG2 VAL B 216     -52.442  41.689  52.332  1.00 26.90      B    C
ATOM 1891  N   PHE B 217     -55.161  40.701  51.088  1.00 30.85      B    N
ATOM 1892  CA  PHE B 217     -56.050  39.608  51.342  1.00 30.85      B    C
ATOM 1893  C   PHE B 217     -55.276  38.350  51.115  1.00 30.85      B    C
ATOM 1894  O   PHE B 217     -54.313  38.330  50.349  1.00 30.85      B    O
ATOM 1895  CB  PHE B 217     -57.263  39.600  50.394  1.00 30.85      B    C
ATOM 1896  CG  PHE B 217     -58.240  38.579  50.865  1.00 30.85      B    C
ATOM 1897  CD1 PHE B 217     -59.077  38.861  51.920  1.00 30.85      B    C
ATOM 1898  CD2 PHE B 217     -58.334  37.351  50.250  1.00 30.85      B    C
ATOM 1899  CE1 PHE B 217     -59.988  37.931  52.363  1.00 30.85      B    C
ATOM 1900  CE2 PHE B 217     -59.244  36.418  50.689  1.00 30.85      B    C
ATOM 1901  CZ  PHE B 217     -60.072  36.706  51.747  1.00 30.85      B    C
ATOM 1902  N   HIS B 218     -55.677  37.255  51.788  1.00 33.56      B    N
ATOM 1903  CA  HIS B 218     -54.981  36.016  51.608  1.00 33.56      B    C
ATOM 1904  C   HIS B 218     -55.764  35.237  50.605  1.00 33.56      B    C
ATOM 1905  O   HIS B 218     -56.939  34.940  50.823  1.00 33.56      B    O
ATOM 1906  CB  HIS B 218     -54.897  35.172  52.892  1.00 33.56      B    C
ATOM 1907  CG  HIS B 218     -54.171  33.873  52.711  1.00 33.56      B    C
ATOM 1908  ND1 HIS B 218     -52.799  33.738  52.774  1.00 33.56      B    N
ATOM 1909  CD2 HIS B 218     -54.654  32.625  52.467  1.00 33.56      B    C
ATOM 1910  CE1 HIS B 218     -52.526  32.426  52.566  1.00 33.56      B    C
ATOM 1911  NE2 HIS B 218     -53.620  31.709  52.375  1.00 33.56      B    N
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Figure 10-30

ATOM	1912	N	LEU	B	219	-55.130	34.898	49.465	1.00	36.08	B	N
ATOM	1913	CA	LEU	B	219	-55.841	34.175	48.453	1.00	36.08	B	C
ATOM	1914	C	LEU	B	219	-55.323	32.775	48.400	1.00	36.08	B	C
ATOM	1915	O	LEU	B	219	-54.174	32.505	48.744	1.00	36.08	B	O
ATOM	1916	CB	LEU	B	219	-55.732	34.750	47.027	1.00	36.08	B	C
ATOM	1917	CG	LEU	B	219	-56.228	36.203	46.874	1.00	36.08	B	C
ATOM	1918	CD1	LEU	B	219	-57.613	36.397	47.508	1.00	36.08	B	C
ATOM	1919	CD2	LEU	B	219	-55.181	37.227	47.330	1.00	36.08	B	C
ATOM	1920	N	HIS	B	220	-56.190	31.838	47.965	1.00	34.21	B	N
ATOM	1921	CA	HIS	B	220	-55.810	30.461	47.870	1.00	34.21	B	C
ATOM	1922	C	HIS	B	220	-55.592	30.166	46.426	1.00	34.21	B	C
ATOM	1923	O	HIS	B	220	-56.165	30.813	45.549	1.00	34.21	B	O
ATOM	1924	CB	HIS	B	220	-56.895	29.494	48.371	1.00	34.21	B	C
ATOM	1925	CG	HIS	B	220	-57.226	29.678	49.824	1.00	34.21	B	C
ATOM	1926	ND1	HIS	B	220	-58.068	30.655	50.303	1.00	34.21	B	N
ATOM	1927	CD2	HIS	B	220	-56.807	28.981	50.915	1.00	34.21	B	C
ATOM	1928	CE1	HIS	B	220	-58.117	30.504	51.652	1.00	34.21	B	C
ATOM	1929	NE2	HIS	B	220	-57.367	29.500	52.069	1.00	34.21	B	N
ATOM	1930	N	GLN	B	221	-54.741	29.167	46.141	1.00	31.81	B	N
ATOM	1931	CA	GLN	B	221	-54.462	28.842	44.778	1.00	31.81	B	C
ATOM	1932	C	GLN	B	221	-55.753	28.442	44.148	1.00	31.81	B	C
ATOM	1933	O	GLN	B	221	-56.552	27.718	44.741	1.00	31.81	B	O
ATOM	1934	CB	GLN	B	221	-53.486	27.666	44.617	1.00	31.81	B	C
ATOM	1935	CG	GLN	B	221	-53.186	27.312	43.161	1.00	31.81	B	C
ATOM	1936	CD	GLN	B	221	-52.214	26.141	43.161	1.00	31.81	B	C
ATOM	1937	OE1	GLN	B	221	-51.846	25.628	44.217	1.00	31.81	B	O
ATOM	1938	NE2	GLN	B	221	-51.787	25.700	41.948	1.00	31.81	B	N
ATOM	1939	N	GLY	B	222	-55.983	28.921	42.910	1.00	32.05	B	N
ATOM	1940	CA	GLY	B	222	-57.178	28.587	42.199	1.00	32.05	B	C
ATOM	1941	C	GLY	B	222	-58.120	29.745	42.253	1.00	32.05	B	C
ATOM	1942	O	GLY	B	222	-59.055	29.822	41.458	1.00	32.05	B	O
ATOM	1943	N	ASP	B	223	-57.894	30.695	43.180	1.00	33.04	B	N
ATOM	1944	CA	ASP	B	223	-58.795	31.807	43.268	1.00	33.04	B	C
ATOM	1945	C	ASP	B	223	-58.556	32.718	42.105	1.00	33.04	B	C
ATOM	1946	O	ASP	B	223	-57.540	32.620	41.421	1.00	33.04	B	O
ATOM	1947	CB	ASP	B	223	-58.659	32.652	44.554	1.00	33.04	B	C
ATOM	1948	CG	ASP	B	223	-59.267	31.900	45.731	1.00	33.04	B	C
ATOM	1949	OD1	ASP	B	223	-60.020	30.921	45.489	1.00	33.04	B	O
ATOM	1950	OD2	ASP	B	223	-58.988	32.306	46.891	1.00	33.04	B	O
ATOM	1951	N	ILE	B	224	-59.527	33.617	41.838	1.00	35.91	B	N
ATOM	1952	CA	ILE	B	224	-59.405	34.560	40.768	1.00	35.91	B	C
ATOM	1953	C	ILE	B	224	-59.885	35.880	41.283	1.00	35.91	B	C
ATOM	1954	O	ILE	B	224	-60.806	35.935	42.095	1.00	35.91	B	O
ATOM	1955	CB	ILE	B	224	-60.277	34.246	39.590	1.00	35.91	B	C
ATOM	1956	CG1	ILE	B	224	-59.908	32.883	38.987	1.00	35.91	B	C
ATOM	1957	CG2	ILE	B	224	-60.167	35.412	38.593	1.00	35.91	B	C
ATOM	1958	CD1	ILE	B	224	-60.950	32.363	38.000	1.00	35.91	B	C
ATOM	1959	N	LEU	B	225	-59.261	36.987	40.839	1.00	39.64	B	N
ATOM	1960	CA	LEU	B	225	-59.766	38.263	41.244	1.00	39.64	B	C
ATOM	1961	C	LEU	B	225	-60.198	38.986	40.010	1.00	39.64	B	C
ATOM	1962	O	LEU	B	225	-59.582	38.852	38.953	1.00	39.64	B	O
ATOM	1963	CB	LEU	B	225	-58.802	39.116	42.093	1.00	39.64	B	C
ATOM	1964	CG	LEU	B	225	-58.606	38.522	43.509	1.00	39.64	B	C
ATOM	1965	CD1	LEU	B	225	-57.659	39.325	44.400	1.00	39.64	B	C
ATOM	1966	CD2	LEU	B	225	-59.952	38.359	44.209	1.00	39.64	B	C
ATOM	1967	N	SER	B	226	-61.317	39.735	40.109	1.00	40.89	B	N
ATOM	1968	CA	SER	B	226	-61.821	40.443	38.968	1.00	40.89	B	C
ATOM	1969	C	SER	B	226	-62.309	41.780	39.429	1.00	40.89	B	C
ATOM	1970	O	SER	B	226	-62.658	41.951	40.596	1.00	40.89	B	O
ATOM	1971	CB	SER	B	226	-63.005	39.741	38.279	1.00	40.89	B	C
ATOM	1972	OG	SER	B	226	-63.448	40.500	37.164	1.00	40.89	B	O
ATOM	1973	N	VAL	B	227	-62.330	42.775	38.515	1.00	43.63	B	N
ATOM	1974	CA	VAL	B	227	-62.817	44.078	38.872	1.00	43.63	B	C
ATOM	1975	C	VAL	B	227	-64.134	44.271	38.178	1.00	43.63	B	C
ATOM	1976	O	VAL	B	227	-64.235	44.168	36.957	1.00	43.63	B	O
ATOM	1977	CB	VAL	B	227	-61.892	45.186	38.474	1.00	43.63	B	C

Figure 10-31

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ATOM 1978  CG1 VAL B 227     -61.667  45.116  36.957  1.00 43.63      B    C
ATOM 1979  CG2 VAL B 227     -62.495  46.516  38.955  1.00 43.63      B    C
ATOM 1980  N   ILE B 228     -65.192  44.572  38.957  1.00 47.24      B    N
ATOM 1981  CA  ILE B 228     -66.522  44.641  38.417  1.00 47.24      B    C
ATOM 1982  C   ILE B 228     -67.156  45.965  38.739  1.00 47.24      B    C
ATOM 1983  O   ILE B 228     -67.016  46.479  39.847  1.00 47.24      B    O
ATOM 1984  CB  ILE B 228     -67.377  43.567  39.026  1.00 47.24      B    C
ATOM 1985  CG1 ILE B 228     -66.839  42.175  38.654  1.00 47.24      B    C
ATOM 1986  CG2 ILE B 228     -68.825  43.797  38.602  1.00 47.24      B    C
ATOM 1987  CD1 ILE B 228     -66.851  41.902  37.151  1.00 47.24      B    C
ATOM 1988  N   ILE B 229     -67.881  46.558  37.760  1.00 49.00      B    N
ATOM 1989  CA  ILE B 229     -68.556  47.807  38.006  1.00 49.00      B    C
ATOM 1990  C   ILE B 229     -70.027  47.555  37.931  1.00 49.00      B    C
ATOM 1991  O   ILE B 229     -70.561  47.314  36.849  1.00 49.00      B    O
ATOM 1992  CB  ILE B 229     -68.230  48.871  37.005  1.00 49.00      B    C
ATOM 1993  CG1 ILE B 229     -66.735  49.205  37.080  1.00 49.00      B    C
ATOM 1994  CG2 ILE B 229     -69.146  50.079  37.260  1.00 49.00      B    C
ATOM 1995  CD1 ILE B 229     -66.266  50.075  35.922  1.00 49.00      B    C
ATOM 1996  N   PRO B 230     -70.697  47.592  39.059  1.00 51.49      B    N
ATOM 1997  CA  PRO B 230     -72.109  47.350  39.031  1.00 51.49      B    C
ATOM 1998  C   PRO B 230     -72.859  48.436  38.341  1.00 51.49      B    C
ATOM 1999  O   PRO B 230     -73.344  49.348  39.007  1.00 51.49      B    O
ATOM 2000  CB  PRO B 230     -72.526  47.106  40.479  1.00 51.49      B    C
ATOM 2001  CG  PRO B 230     -71.251  46.524  41.117  1.00 51.49      B    C
ATOM 2002  CD  PRO B 230     -70.098  47.140  40.304  1.00 51.49      B    C
ATOM 2003  N   ARG B 231     -73.024  48.326  37.016  1.00 51.08      B    N
ATOM 2004  CA  ARG B 231     -73.797  49.295  36.307  1.00 51.08      B    C
ATOM 2005  C   ARG B 231     -73.781  48.888  34.874  1.00 51.08      B    C
ATOM 2006  O   ARG B 231     -72.759  48.436  34.360  1.00 51.08      B    O
ATOM 2007  CB  ARG B 231     -73.266  50.732  36.384  1.00 51.08      B    C
ATOM 2008  CG  ARG B 231     -74.220  51.706  35.693  1.00 51.08      B    C
ATOM 2009  CD  ARG B 231     -73.917  53.178  35.951  1.00 51.08      B    C
ATOM 2010  NE  ARG B 231     -75.023  53.957  35.329  1.00 51.08      B    N
ATOM 2011  CZ  ARG B 231     -76.181  54.160  36.022  1.00 51.08      B    C
ATOM 2012  NH1 ARG B 231     -76.322  53.650  37.280  1.00 51.08      B    N
ATOM 2013  NH2 ARG B 231     -77.200  54.872  35.458  1.00 51.08      B    N
ATOM 2014  N   ALA B 232     -74.928  49.021  34.186  1.00 49.08      B    N
ATOM 2015  CA  ALA B 232     -74.922  48.662  32.800  1.00 49.08      B    C
ATOM 2016  C   ALA B 232     -74.294  49.804  32.074  1.00 49.08      B    C
ATOM 2017  O   ALA B 232     -74.614  50.956  32.364  1.00 49.08      B    O
ATOM 2018  CB  ALA B 232     -76.325  48.444  32.210  1.00 49.08      B    C
ATOM 2019  N   ARG B 233     -73.414  49.502  31.090  1.00 50.24      B    N
ATOM 2020  CA  ARG B 233     -72.741  50.518  30.329  1.00 50.24      B    C
ATOM 2021  C   ARG B 233     -72.174  51.513  31.290  1.00 50.24      B    C
ATOM 2022  O   ARG B 233     -72.717  52.602  31.457  1.00 50.24      B    O
ATOM 2023  CB  ARG B 233     -73.672  51.275  29.370  1.00 50.24      B    C
ATOM 2024  CG  ARG B 233     -74.292  50.395  28.285  1.00 50.24      B    C
ATOM 2025  CD  ARG B 233     -75.215  51.166  27.338  1.00 50.24      B    C
ATOM 2026  NE  ARG B 233     -75.748  50.195  26.341  1.00 50.24      B    N
ATOM 2027  CZ  ARG B 233     -76.849  50.519  25.602  1.00 50.24      B    C
ATOM 2028  NH1 ARG B 233     -77.449  51.734  25.767  1.00 50.24      B    N
ATOM 2029  NH2 ARG B 233     -77.353  49.625  24.702  1.00 50.24      B    N
ATOM 2030  N   ALA B 234     -71.072  51.146  31.965  1.00 53.30      B    N
ATOM 2031  CA  ALA B 234     -70.518  51.955  33.009  1.00 53.30      B    C
ATOM 2032  C   ALA B 234     -70.116  53.323  32.532  1.00 53.30      B    C
ATOM 2033  O   ALA B 234     -70.399  54.297  33.227  1.00 53.30      B    O
ATOM 2034  CB  ALA B 234     -69.296  51.311  33.683  1.00 53.30      B    C
ATOM 2035  N   LYS B 235     -69.542  53.470  31.316  1.00 58.84      B    N
ATOM 2036  CA  LYS B 235     -69.010  54.752  30.913  1.00 58.84      B    C
ATOM 2037  C   LYS B 235     -67.800  55.100  31.734  1.00 58.84      B    C
ATOM 2038  O   LYS B 235     -67.850  55.933  32.639  1.00 58.84      B    O
ATOM 2039  CB  LYS B 235     -70.012  55.914  31.032  1.00 58.84      B    C
ATOM 2040  CG  LYS B 235     -71.056  55.952  29.913  1.00 58.84      B    C
ATOM 2041  CD  LYS B 235     -72.044  54.788  29.943  1.00 58.84      B    C
ATOM 2042  CE  LYS B 235     -73.081  54.837  28.820  1.00 58.84      B    C
ATOM 2043  NZ  LYS B 235     -72.447  54.472  27.533  1.00 58.84      B    N
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Figure 10-32

ATOM	2044	N	LEU	B	236	-66.677	54.403	31.430	1.00	63.52	B	N
ATOM	2045	CA	LEU	B	236	-65.392	54.553	32.071	1.00	63.52	B	C
ATOM	2046	C	LEU	B	236	-64.412	55.147	31.087	1.00	63.52	B	C
ATOM	2047	O	LEU	B	236	-64.769	55.549	29.981	1.00	63.52	B	O
ATOM	2048	CB	LEU	B	236	-64.691	53.235	32.420	1.00	63.52	B	C
ATOM	2049	CG	LEU	B	236	-65.497	52.227	33.237	1.00	63.52	B	C
ATOM	2050	CD1	LEU	B	236	-66.672	51.685	32.411	1.00	63.52	B	C
ATOM	2051	CD2	LEU	B	236	-64.573	51.117	33.756	1.00	63.52	B	C
ATOM	2052	N	ASN	B	237	-63.139	55.283	31.534	1.00	65.59	B	N
ATOM	2053	CA	ASN	B	237	-62.011	55.816	30.798	1.00	65.59	B	C
ATOM	2054	C	ASN	B	237	-61.359	54.882	29.799	1.00	65.59	B	C
ATOM	2055	O	ASN	B	237	-61.121	55.253	28.651	1.00	65.59	B	O
ATOM	2056	CB	ASN	B	237	-60.902	56.290	31.756	1.00	65.59	B	C
ATOM	2057	CG	ASN	B	237	-59.917	57.155	30.984	1.00	65.59	B	C
ATOM	2058	OD1	ASN	B	237	-58.848	57.492	31.491	1.00	65.59	B	O
ATOM	2059	ND2	ASN	B	237	-60.283	57.538	29.732	1.00	65.59	B	N
ATOM	2060	N	LEU	B	238	-61.014	53.650	30.219	1.00	66.15	B	N
ATOM	2061	CA	LEU	B	238	-60.304	52.703	29.394	1.00	66.15	B	C
ATOM	2062	C	LEU	B	238	-58.946	53.237	29.039	1.00	66.15	B	C
ATOM	2063	O	LEU	B	238	-58.264	52.686	28.175	1.00	66.15	B	O
ATOM	2064	CB	LEU	B	238	-61.047	52.290	28.115	1.00	66.15	B	C
ATOM	2065	CG	LEU	B	238	-62.402	51.655	28.458	1.00	66.15	B	C
ATOM	2066	CD1	LEU	B	238	-62.940	50.781	27.314	1.00	66.15	B	C
ATOM	2067	CD2	LEU	B	238	-62.343	50.965	29.827	1.00	66.15	B	C
ATOM	2068	N	SER	B	239	-58.490	54.307	29.720	1.00	64.73	B	N
ATOM	2069	CA	SER	B	239	-57.173	54.809	29.433	1.00	64.73	B	C
ATOM	2070	C	SER	B	239	-56.208	54.009	30.250	1.00	64.73	B	C
ATOM	2071	O	SER	B	239	-56.318	53.907	31.472	1.00	64.73	B	O
ATOM	2072	CB	SER	B	239	-56.971	56.292	29.796	1.00	64.73	B	C
ATOM	2073	OG	SER	B	239	-57.733	57.123	28.933	1.00	64.73	B	O
ATOM	2074	N	PRO	B	240	-55.231	53.481	29.564	1.00	68.26	B	N
ATOM	2075	CA	PRO	B	240	-54.270	52.577	30.137	1.00	68.26	B	C
ATOM	2076	C	PRO	B	240	-53.691	53.128	31.391	1.00	68.26	B	C
ATOM	2077	O	PRO	B	240	-53.365	52.349	32.289	1.00	68.26	B	O
ATOM	2078	CB	PRO	B	240	-53.194	52.399	29.068	1.00	68.26	B	C
ATOM	2079	CG	PRO	B	240	-53.225	53.736	28.310	1.00	68.26	B	C
ATOM	2080	CD	PRO	B	240	-54.698	54.166	28.395	1.00	68.26	B	C
ATOM	2081	N	HIS	B	241	-53.520	54.457	31.454	1.00	72.12	B	N
ATOM	2082	CA	HIS	B	241	-53.001	55.065	32.637	1.00	72.12	B	C
ATOM	2083	C	HIS	B	241	-54.184	55.692	33.285	1.00	72.12	B	C
ATOM	2084	O	HIS	B	241	-54.578	56.794	32.914	1.00	72.12	B	O
ATOM	2085	CB	HIS	B	241	-52.039	56.238	32.363	1.00	72.12	B	C
ATOM	2086	CG	HIS	B	241	-50.835	55.881	31.544	1.00	72.12	B	C
ATOM	2087	ND1	HIS	B	241	-50.819	55.867	30.167	1.00	72.12	B	N
ATOM	2088	CD2	HIS	B	241	-49.578	55.536	31.935	1.00	72.12	B	C
ATOM	2089	CE1	HIS	B	241	-49.561	55.518	29.796	1.00	72.12	B	C
ATOM	2090	NE2	HIS	B	241	-48.773	55.307	30.834	1.00	72.12	B	N
ATOM	2091	N	GLY	B	242	-54.751	55.047	34.311	1.00	75.74	B	N
ATOM	2092	CA	GLY	B	242	-55.907	55.616	34.930	1.00	75.74	B	C
ATOM	2093	C	GLY	B	242	-56.861	54.518	35.264	1.00	75.74	B	C
ATOM	2094	O	GLY	B	242	-57.506	54.576	36.310	1.00	75.74	B	O
ATOM	2095	N	THR	B	243	-57.010	53.485	34.414	1.00	77.20	B	N
ATOM	2096	CA	THR	B	243	-57.853	52.442	34.914	1.00	77.20	B	C
ATOM	2097	C	THR	B	243	-57.140	51.129	34.825	1.00	77.20	B	C
ATOM	2098	O	THR	B	243	-57.120	50.474	33.793	1.00	77.20	B	O
ATOM	2099	CB	THR	B	243	-59.235	52.405	34.321	1.00	77.20	B	C
ATOM	2100	OG1	THR	B	243	-60.045	51.511	35.064	1.00	77.20	B	O
ATOM	2101	CG2	THR	B	243	-59.194	51.994	32.853	1.00	77.20	B	C
ATOM	2102	N	PHE	B	244	-56.541	50.683	35.944	1.00	71.63	B	N
ATOM	2103	CA	PHE	B	244	-55.749	49.485	35.924	1.00	71.63	B	C
ATOM	2104	C	PHE	B	244	-56.073	48.644	37.121	1.00	71.63	B	C
ATOM	2105	O	PHE	B	244	-56.794	49.077	38.017	1.00	71.63	B	O
ATOM	2106	CB	PHE	B	244	-54.250	49.809	35.942	1.00	71.63	B	C
ATOM	2107	CG	PHE	B	244	-54.075	50.769	37.067	1.00	71.63	B	C
ATOM	2108	CD1	PHE	B	244	-53.869	50.335	38.355	1.00	71.63	B	C
ATOM	2109	CD2	PHE	B	244	-54.138	52.123	36.827	1.00	71.63	B	C

Figure 10-33

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ATOM 2110  CE1 PHE B 244     -53.719  51.237  39.382  1.00 71.63      B     C
ATOM 2111  CE2 PHE B 244     -53.989  53.030  37.848  1.00 71.63      B     C
ATOM 2112  CZ  PHE B 244     -53.773  52.587  39.131  1.00 71.63      B     C
ATOM 2113  N   LEU B 245     -55.573  47.385  37.138  1.00 65.02      B     N
ATOM 2114  CA  LEU B 245     -55.844  46.491  38.237  1.00 65.02      B     C
ATOM 2115  C   LEU B 245     -54.588  45.712  38.435  1.00 65.02      B     C
ATOM 2116  O   LEU B 245     -53.915  45.374  37.460  1.00 65.02      B     O
ATOM 2117  CB  LEU B 245     -56.848  45.360  37.977  1.00 65.02      B     C
ATOM 2118  CG  LEU B 245     -57.932  45.744  36.994  1.00 65.02      B     C
ATOM 2119  CD1 LEU B 245     -58.678  47.032  37.381  1.00 65.02      B     C
ATOM 2120  CD2 LEU B 245     -57.262  45.754  35.627  1.00 65.02      B     C
ATOM 2121  N   GLY B 246     -54.239  45.369  39.692  1.00 55.28      B     N
ATOM 2122  CA  GLY B 246     -53.024  44.617  39.818  1.00 55.28      B     C
ATOM 2123  C   GLY B 246     -52.912  43.961  41.160  1.00 55.28      B     C
ATOM 2124  O   GLY B 246     -53.610  44.321  42.108  1.00 55.28      B     O
ATOM 2125  N   PHE B 247     -52.003  42.958  41.248  1.00 47.05      B     N
ATOM 2126  CA  PHE B 247     -51.727  42.252  42.469  1.00 47.05      B     C
ATOM 2127  C   PHE B 247     -50.251  42.205  42.653  1.00 47.05      B     C
ATOM 2128  O   PHE B 247     -49.501  41.998  41.700  1.00 47.05      B     O
ATOM 2129  CB  PHE B 247     -51.918  40.730  42.495  1.00 47.05      B     C
ATOM 2130  CG  PHE B 247     -53.315  40.339  42.315  1.00 47.05      B     C
ATOM 2131  CD1 PHE B 247     -54.283  41.011  43.002  1.00 47.05      B     C
ATOM 2132  CD2 PHE B 247     -53.623  39.248  41.537  1.00 47.05      B     C
ATOM 2133  CE1 PHE B 247     -55.579  40.627  42.840  1.00 47.05      B     C
ATOM 2134  CE2 PHE B 247     -54.929  38.865  41.388  1.00 47.05      B     C
ATOM 2135  CZ  PHE B 247     -55.907  39.566  42.037  1.00 47.05      B     C
ATOM 2136  N   VAL B 248     -49.817  42.331  43.918  1.00 40.65      B     N
ATOM 2137  CA  VAL B 248     -48.441  42.137  44.241  1.00 40.65      B     C
ATOM 2138  C   VAL B 248     -48.445  41.100  45.310  1.00 40.65      B     C
ATOM 2139  O   VAL B 248     -49.254  41.152  46.235  1.00 40.65      B     O
ATOM 2140  CB  VAL B 248     -47.757  43.352  44.788  1.00 40.65      B     C
ATOM 2141  CG1 VAL B 248     -48.515  43.812  46.040  1.00 40.65      B     C
ATOM 2142  CG2 VAL B 248     -46.288  42.995  45.075  1.00 40.65      B     C
ATOM 2143  N   LYS B 249     -47.536  40.117  45.197  1.00 34.46      B     N
ATOM 2144  CA  LYS B 249     -47.502  39.068  46.168  1.00 34.46      B     C
ATOM 2145  C   LYS B 249     -46.561  39.507  47.235  1.00 34.46      B     C
ATOM 2146  O   LYS B 249     -45.412  39.854  46.964  1.00 34.46      B     O
ATOM 2147  CB  LYS B 249     -47.011  37.742  45.560  1.00 34.46      B     C
ATOM 2148  CG  LYS B 249     -47.124  36.515  46.465  1.00 34.46      B     C
ATOM 2149  CD  LYS B 249     -47.066  35.205  45.673  1.00 34.46      B     C
ATOM 2150  CE  LYS B 249     -46.266  35.315  44.371  1.00 34.46      B     C
ATOM 2151  NZ  LYS B 249     -46.295  34.038  43.625  1.00 34.46      B     N
ATOM 2152  N   LEU B 250     -47.040  39.520  48.493  1.00 29.77      B     N
ATOM 2153  CA  LEU B 250     -46.217  39.966  49.574  1.00 29.77      B     C
ATOM 2154  C   LEU B 250     -45.177  38.893  49.864  1.00 29.77      B     C
ATOM 2155  1OCT LEU B 250     -45.573  37.756  50.233  1.00 29.77      B     O
ATOM 2156  CB  LEU B 250     -47.005  40.231  50.867  1.00 29.77      B     C
ATOM 2157  CG  LEU B 250     -47.998  41.400  50.736  1.00 29.77      B     C
ATOM 2158  CD1 LEU B 250     -48.765  41.635  52.045  1.00 29.77      B     C
ATOM 2159  CD2 LEU B 250     -47.303  42.669  50.221  1.00 29.77      B     C
ATOM 2160  2OCT LEU B 250     -43.964  39.208  49.723  1.00 29.77      B     O
ATOM 2161  N   GLN C 114     -34.206  44.364  53.112  1.00 54.74      C     N
ATOM 2162  CA  GLN C 114     -34.797  45.606  53.481  1.00 54.74      C     C
ATOM 2163  C   GLN C 114     -35.086  46.285  52.195  1.00 54.74      C     C
ATOM 2164  O   GLN C 114     -34.172  46.673  51.472  1.00 54.74      C     O
ATOM 2165  CB  GLN C 114     -33.865  46.526  54.290  1.00 54.74      C     C
ATOM 2166  CG  GLN C 114     -33.478  45.964  55.659  1.00 54.74      C     C
ATOM 2167  CD  GLN C 114     -32.558  46.974  56.330  1.00 54.74      C     C
ATOM 2168  OE1 GLN C 114     -32.255  48.024  55.766  1.00 54.74      C     O
ATOM 2169  NE2 GLN C 114     -32.100  46.652  57.569  1.00 54.74      C     N
ATOM 2170  N   HIS C 115     -36.378  46.419  51.852  1.00 53.85      C     N
ATOM 2171  CA  HIS C 115     -36.696  47.057  50.616  1.00 53.85      C     C
ATOM 2172  C   HIS C 115     -36.412  48.509  50.797  1.00 53.85      C     C
ATOM 2173  O   HIS C 115     -36.802  49.103  51.800  1.00 53.85      C     O
ATOM 2174  CB  HIS C 115     -38.173  46.912  50.214  1.00 53.85      C     C
ATOM 2175  CG  HIS C 115     -39.110  47.445  51.258  1.00 53.85      C     C
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Figure 10-34

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ATOM 2176  ND1 HIS C 115     -39.419  48.779  51.413  1.00 53.85      C    N
ATOM 2177  CD2 HIS C 115     -39.812  46.788  52.221  1.00 53.85      C    C
ATOM 2178  CE1 HIS C 115     -40.285  48.860  52.455  1.00 53.85      C    C
ATOM 2179  NE2 HIS C 115     -40.553  47.678  52.977  1.00 53.85      C    N
ATOM 2180  N   SER C 116     -35.714  49.121  49.821  1.00 49.07      C    N
ATOM 2181  CA  SER C 116     -35.396  50.512  49.940  1.00 49.07      C    C
ATOM 2182  C   SER C 116     -36.636  51.279  49.624  1.00 49.07      C    C
ATOM 2183  O   SER C 116     -37.510  50.792  48.907  1.00 49.07      C    O
ATOM 2184  CB  SER C 116     -34.312  50.985  48.957  1.00 49.07      C    C
ATOM 2185  OG  SER C 116     -33.081  50.335  49.232  1.00 49.07      C    O
ATOM 2186  N   VAL C 117     -36.755  52.498  50.185  1.00 46.78      C    N
ATOM 2187  CA  VAL C 117     -37.902  53.316  49.913  1.00 46.78      C    C
ATOM 2188  C   VAL C 117     -37.516  54.736  50.189  1.00 46.78      C    C
ATOM 2189  O   VAL C 117     -36.638  55.005  51.008  1.00 46.78      C    O
ATOM 2190  CB  VAL C 117     -39.071  53.028  50.815  1.00 46.78      C    C
ATOM 2191  CG1 VAL C 117     -39.515  51.571  50.616  1.00 46.78      C    C
ATOM 2192  CG2 VAL C 117     -38.663  53.367  52.259  1.00 46.78      C    C
ATOM 2193  N   LEU C 118     -38.165  55.690  49.493  1.00 46.47      C    N
ATOM 2194  CA  LEU C 118     -37.890  57.082  49.711  1.00 46.47      C    C
ATOM 2195  C   LEU C 118     -39.210  57.784  49.607  1.00 46.47      C    C
ATOM 2196  O   LEU C 118     -40.027  57.451  48.749  1.00 46.47      C    O
ATOM 2197  CB  LEU C 118     -36.915  57.655  48.656  1.00 46.47      C    C
ATOM 2198  CG  LEU C 118     -36.463  59.124  48.837  1.00 46.47      C    C
ATOM 2199  CD1 LEU C 118     -35.392  59.485  47.796  1.00 46.47      C    C
ATOM 2200  CD2 LEU C 118     -37.629  60.123  48.791  1.00 46.47      C    C
ATOM 2201  N   HIS C 119     -39.472  58.768  50.492  1.00 47.74      C    N
ATOM 2202  CA  HIS C 119     -40.730  59.447  50.387  1.00 47.74      C    C
ATOM 2203  C   HIS C 119     -40.540  60.925  50.541  1.00 47.74      C    C
ATOM 2204  O   HIS C 119     -39.681  61.387  51.292  1.00 47.74      C    O
ATOM 2205  CB  HIS C 119     -41.796  58.939  51.375  1.00 47.74      C    C
ATOM 2206  CG  HIS C 119     -41.236  58.508  52.696  1.00 47.74      C    C
ATOM 2207  ND1 HIS C 119     -40.626  57.292  52.910  1.00 47.74      C    N
ATOM 2208  CD2 HIS C 119     -41.204  59.152  53.891  1.00 47.74      C    C
ATOM 2209  CE1 HIS C 119     -40.256  57.265  54.217  1.00 47.74      C    C
ATOM 2210  NE2 HIS C 119     -40.587  58.373  54.853  1.00 47.74      C    N
ATOM 2211  N   LEU C 120     -41.349  61.700  49.786  1.00 49.98      C    N
ATOM 2212  CA  LEU C 120     -41.299  63.136  49.791  1.00 49.98      C    C
ATOM 2213  C   LEU C 120     -42.593  63.653  50.342  1.00 49.98      C    C
ATOM 2214  O   LEU C 120     -43.643  63.033  50.181  1.00 49.98      C    O
ATOM 2215  CB  LEU C 120     -41.131  63.766  48.395  1.00 49.98      C    C
ATOM 2216  CG  LEU C 120     -39.752  63.509  47.757  1.00 49.98      C    C
ATOM 2217  CD1 LEU C 120     -39.518  62.011  47.531  1.00 49.98      C    C
ATOM 2218  CD2 LEU C 120     -39.555  64.326  46.473  1.00 49.98      C    C
ATOM 2219  N   VAL C 121     -42.526  64.825  51.009  1.00 49.34      C    N
ATOM 2220  CA  VAL C 121     -43.627  65.460  51.684  1.00 49.34      C    C
ATOM 2221  C   VAL C 121     -43.629  66.898  51.210  1.00 49.34      C    C
ATOM 2222  O   VAL C 121     -42.565  67.495  51.075  1.00 49.34      C    O
ATOM 2223  CB  VAL C 121     -43.340  65.379  53.172  1.00 49.34      C    C
ATOM 2224  CG1 VAL C 121     -44.424  66.014  54.054  1.00 49.34      C    C
ATOM 2225  CG2 VAL C 121     -43.099  63.892  53.486  1.00 49.34      C    C
ATOM 2226  N   PRO C 122     -44.770  67.485  50.940  1.00 47.62      C    N
ATOM 2227  CA  PRO C 122     -44.809  68.820  50.411  1.00 47.62      C    C
ATOM 2228  C   PRO C 122     -44.182  69.762  51.381  1.00 47.62      C    C
ATOM 2229  O   PRO C 122     -44.271  69.526  52.586  1.00 47.62      C    O
ATOM 2230  CB  PRO C 122     -46.268  69.170  50.293  1.00 47.62      C    C
ATOM 2231  CG  PRO C 122     -46.842  68.481  51.537  1.00 47.62      C    C
ATOM 2232  CD  PRO C 122     -45.911  67.281  51.787  1.00 47.62      C    C
ATOM 2233  N   ILE C 123     -43.567  70.845  50.869  1.00 42.63      C    N
ATOM 2234  CA  ILE C 123     -42.961  71.807  51.737  1.00 42.63      C    C
ATOM 2235  C   ILE C 123     -43.859  73.007  51.805  1.00 42.63      C    C
ATOM 2236  O   ILE C 123     -44.010  73.771  50.852  1.00 42.63      C    O
ATOM 2237  CB  ILE C 123     -41.580  72.227  51.299  1.00 42.63      C    C
ATOM 2238  CG1 ILE C 123     -40.958  73.165  52.344  1.00 42.63      C    C
ATOM 2239  CG2 ILE C 123     -41.645  72.803  49.875  1.00 42.63      C    C
ATOM 2240  CD1 ILE C 123     -40.671  72.478  53.678  1.00 42.63      C    C
ATOM 2241  N   ASN C 124     -44.478  73.198  52.981  1.00 35.86      C    N
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Figure 10-35

ATOM	2242	CA	ASN	C	124	-45.393	74.274	53.226	1.00	35.86	C C
ATOM	2243	C	ASN	C	124	-44.630	75.558	53.151	1.00	35.86	C C
ATOM	2244	O	ASN	C	124	-45.179	76.611	52.831	1.00	35.86	C O
ATOM	2245	CB	ASN	C	124	-46.043	74.174	54.618	1.00	35.86	C C
ATOM	2246	CG	ASN	C	124	-47.143	75.224	54.738	1.00	35.86	C C
ATOM	2247	OD1	ASN	C	124	-46.888	76.426	54.695	1.00	35.86	C O
ATOM	2248	ND2	ASN	C	124	-48.409	74.754	54.905	1.00	35.86	C N
ATOM	2249	N	ALA	C	125	-43.328	75.490	53.475	1.00	31.82	C N
ATOM	2250	CA	ALA	C	125	-42.474	76.639	53.536	1.00	31.82	C C
ATOM	2251	C	ALA	C	125	-42.345	77.316	52.203	1.00	31.82	C C
ATOM	2252	O	ALA	C	125	-42.354	78.545	52.144	1.00	31.82	C O
ATOM	2253	CB	ALA	C	125	-41.053	76.287	54.008	1.00	31.82	C C
ATOM	2254	N	THR	C	126	-42.238	76.563	51.088	1.00	29.76	C N
ATOM	2255	CA	THR	C	126	-41.944	77.253	49.862	1.00	29.76	C C
ATOM	2256	C	THR	C	126	-43.133	77.250	48.948	1.00	29.76	C C
ATOM	2257	O	THR	C	126	-44.021	76.405	49.048	1.00	29.76	C O
ATOM	2258	CB	THR	C	126	-40.785	76.656	49.117	1.00	29.76	C C
ATOM	2259	OG1	THR	C	126	-39.656	76.570	49.975	1.00	29.76	C O
ATOM	2260	CG2	THR	C	126	-40.438	77.581	47.938	1.00	29.76	C C
ATOM	2261	N	SER	C	127	-43.174	78.241	48.029	1.00	31.01	C N
ATOM	2262	CA	SER	C	127	-44.249	78.391	47.094	1.00	31.01	C C
ATOM	2263	C	SER	C	127	-44.129	77.327	46.050	1.00	31.01	C C
ATOM	2264	O	SER	C	127	-43.077	76.712	45.882	1.00	31.01	C O
ATOM	2265	CB	SER	C	127	-44.251	79.749	46.373	1.00	31.01	C C
ATOM	2266	OG	SER	C	127	-43.084	79.877	45.575	1.00	31.01	C O
ATOM	2267	N	LYS	C	128	-45.236	77.097	45.319	1.00	36.69	C N
ATOM	2268	CA	LYS	C	128	-45.315	76.071	44.322	1.00	36.69	C C
ATOM	2269	C	LYS	C	128	-44.454	76.464	43.165	1.00	36.69	C C
ATOM	2270	O	LYS	C	128	-44.332	77.645	42.843	1.00	36.69	C O
ATOM	2271	CB	LYS	C	128	-46.744	75.875	43.795	1.00	36.69	C C
ATOM	2272	CG	LYS	C	128	-46.946	74.567	43.041	1.00	36.69	C C
ATOM	2273	CD	LYS	C	128	-46.861	73.347	43.950	1.00	36.69	C C
ATOM	2274	CE	LYS	C	128	-47.259	73.649	45.393	1.00	36.69	C C
ATOM	2275	NZ	LYS	C	128	-48.681	74.054	45.453	1.00	36.69	C N
ATOM	2276	N	ASP	C	129	-43.818	75.466	42.518	1.00	40.37	C N
ATOM	2277	CA	ASP	C	129	-42.955	75.738	41.406	1.00	40.37	C C
ATOM	2278	C	ASP	C	129	-43.809	75.979	40.208	1.00	40.37	C C
ATOM	2279	O	ASP	C	129	-44.735	75.220	39.924	1.00	40.37	C O
ATOM	2280	CB	ASP	C	129	-41.992	74.584	41.081	1.00	40.37	C C
ATOM	2281	CG	ASP	C	129	-40.927	75.094	40.117	1.00	40.37	C C
ATOM	2282	OD1	ASP	C	129	-41.006	76.287	39.722	1.00	40.37	C O
ATOM	2283	OD2	ASP	C	129	-40.019	74.295	39.766	1.00	40.37	C O
ATOM	2284	N	ASP	C	130	-43.498	77.060	39.472	1.00	44.03	C N
ATOM	2285	CA	ASP	C	130	-44.279	77.429	38.336	1.00	44.03	C C
ATOM	2286	C	ASP	C	130	-43.498	77.159	37.090	1.00	44.03	C C
ATOM	2287	O	ASP	C	130	-42.358	77.589	36.921	1.00	44.03	C O
ATOM	2288	CB	ASP	C	130	-44.663	78.922	38.345	1.00	44.03	C C
ATOM	2289	CG	ASP	C	130	-45.687	79.202	37.252	1.00	44.03	C C
ATOM	2290	OD1	ASP	C	130	-45.441	78.810	36.081	1.00	44.03	C O
ATOM	2291	OD2	ASP	C	130	-46.739	79.813	37.581	1.00	44.03	C O
ATOM	2292	N	SER	C	131	-44.143	76.390	36.199	1.00	47.28	C N
ATOM	2293	CA	SER	C	131	-43.748	76.039	34.870	1.00	47.28	C C
ATOM	2294	C	SER	C	131	-45.084	76.131	34.210	1.00	47.28	C C
ATOM	2295	O	SER	C	131	-45.994	76.675	34.825	1.00	47.28	C O
ATOM	2296	CB	SER	C	131	-43.268	74.586	34.722	1.00	47.28	C C
ATOM	2297	OG	SER	C	131	-42.899	74.329	33.375	1.00	47.28	C O
ATOM	2298	N	ASP	C	132	-45.273	75.650	32.971	1.00	45.71	C N
ATOM	2299	CA	ASP	C	132	-46.607	75.716	32.440	1.00	45.71	C C
ATOM	2300	C	ASP	C	132	-47.416	74.861	33.350	1.00	45.71	C C
ATOM	2301	O	ASP	C	132	-48.592	75.103	33.623	1.00	45.71	C O
ATOM	2302	CB	ASP	C	132	-46.723	75.132	31.022	1.00	45.71	C C
ATOM	2303	CG	ASP	C	132	-48.136	75.393	30.517	1.00	45.71	C C
ATOM	2304	OD1	ASP	C	132	-48.935	76.006	31.274	1.00	45.71	C O
ATOM	2305	OD2	ASP	C	132	-48.435	74.987	29.362	1.00	45.71	C O
ATOM	2306	N	VAL	C	133	-46.752	73.821	33.866	1.00	46.63	C N
ATOM	2307	CA	VAL	C	133	-47.376	72.918	34.763	1.00	46.63	C C

Figure 10-36

ATOM	2308	C	VAL	C	133	-46.972	73.390	36.125	1.00	46.63	C	C
ATOM	2309	O	VAL	C	133	-46.185	74.327	36.250	1.00	46.63	C	O
ATOM	2310	CB	VAL	C	133	-46.903	71.517	34.547	1.00	46.63	C	C
ATOM	2311	CG1	VAL	C	133	-45.693	71.235	35.455	1.00	46.63	C	C
ATOM	2312	CG2	VAL	C	133	-48.112	70.583	34.648	1.00	46.63	C	C
ATOM	2313	N	THR	C	134	-47.554	72.810	37.187	1.00	47.14	C	N
ATOM	2314	CA	THR	C	134	-47.220	73.262	38.505	1.00	47.14	C	C
ATOM	2315	C	THR	C	134	-46.667	72.099	39.272	1.00	47.14	C	C
ATOM	2316	O	THR	C	134	-47.252	71.017	39.282	1.00	47.14	C	O
ATOM	2317	CB	THR	C	134	-48.421	73.784	39.235	1.00	47.14	C	C
ATOM	2318	OG1	THR	C	134	-48.051	74.273	40.512	1.00	47.14	C	O
ATOM	2319	CG2	THR	C	134	-49.454	72.655	39.366	1.00	47.14	C	C
ATOM	2320	N	GLU	C	135	-45.518	72.306	39.948	1.00	48.66	C	N
ATOM	2321	CA	GLU	C	135	-44.851	71.255	40.662	1.00	48.66	C	C
ATOM	2322	C	GLU	C	135	-44.812	71.643	42.107	1.00	48.66	C	C
ATOM	2323	O	GLU	C	135	-44.633	72.816	42.430	1.00	48.66	C	O
ATOM	2324	CB	GLU	C	135	-43.399	71.106	40.186	1.00	48.66	C	C
ATOM	2325	CG	GLU	C	135	-43.294	70.669	38.721	1.00	48.66	C	C
ATOM	2326	CD	GLU	C	135	-41.834	70.745	38.295	1.00	48.66	C	C
ATOM	2327	OE1	GLU	C	135	-40.983	71.100	39.155	1.00	48.66	C	O
ATOM	2328	OE2	GLU	C	135	-41.552	70.453	37.103	1.00	48.66	C	O
ATOM	2329	N	VAL	C	136	-44.979	70.679	43.039	1.00	53.13	C	N
ATOM	2330	CA	VAL	C	136	-44.964	71.144	44.399	1.00	53.13	C	C
ATOM	2331	C	VAL	C	136	-43.577	70.967	44.920	1.00	53.13	C	C
ATOM	2332	O	VAL	C	136	-42.860	70.061	44.498	1.00	53.13	C	O
ATOM	2333	CB	VAL	C	136	-45.865	70.450	45.372	1.00	53.13	C	C
ATOM	2334	CG1	VAL	C	136	-47.252	70.239	44.745	1.00	53.13	C	C
ATOM	2335	CG2	VAL	C	136	-45.131	69.240	45.925	1.00	53.13	C	C
ATOM	2336	N	MET	C	137	-43.152	71.837	45.855	1.00	54.30	C	N
ATOM	2337	CA	MET	C	137	-41.825	71.687	46.365	1.00	54.30	C	C
ATOM	2338	C	MET	C	137	-41.809	70.579	47.354	1.00	54.30	C	C
ATOM	2339	O	MET	C	137	-42.673	70.475	48.227	1.00	54.30	C	O
ATOM	2340	CB	MET	C	137	-41.197	72.953	46.964	1.00	54.30	C	C
ATOM	2341	CG	MET	C	137	-40.824	73.946	45.865	1.00	54.30	C	C
ATOM	2342	SD	MET	C	137	-39.539	75.142	46.319	1.00	54.30	C	S
ATOM	2343	CE	MET	C	137	-38.199	73.918	46.361	1.00	54.30	C	C
ATOM	2344	N	TRP	C	138	-40.790	69.710	47.226	1.00	53.49	C	N
ATOM	2345	CA	TRP	C	138	-40.772	68.537	48.037	1.00	53.49	C	C
ATOM	2346	C	TRP	C	138	-39.694	68.644	49.060	1.00	53.49	C	C
ATOM	2347	O	TRP	C	138	-38.663	69.279	48.842	1.00	53.49	C	O
ATOM	2348	CB	TRP	C	138	-40.525	67.272	47.211	1.00	53.49	C	C
ATOM	2349	CG	TRP	C	138	-41.583	67.054	46.158	1.00	53.49	C	C
ATOM	2350	CD1	TRP	C	138	-41.459	66.985	44.801	1.00	53.49	C	C
ATOM	2351	CD2	TRP	C	138	-42.976	66.868	46.446	1.00	53.49	C	C
ATOM	2352	NE1	TRP	C	138	-42.683	66.728	44.228	1.00	53.49	C	N
ATOM	2353	CE2	TRP	C	138	-43.628	66.656	45.231	1.00	53.49	C	C
ATOM	2354	CE3	TRP	C	138	-43.657	66.847	47.632	1.00	53.49	C	C
ATOM	2355	CZ2	TRP	C	138	-44.975	66.402	45.187	1.00	53.49	C	C
ATOM	2356	CZ3	TRP	C	138	-45.017	66.614	47.579	1.00	53.49	C	C
ATOM	2357	CH2	TRP	C	138	-45.666	66.390	46.381	1.00	53.49	C	C
ATOM	2358	N	GLN	C	139	-39.950	68.041	50.238	1.00	49.24	C	N
ATOM	2359	CA	GLN	C	139	-38.985	68.001	51.296	1.00	49.24	C	C
ATOM	2360	C	GLN	C	139	-38.838	66.551	51.643	1.00	49.24	C	C
ATOM	2361	O	GLN	C	139	-39.831	65.851	51.833	1.00	49.24	C	O
ATOM	2362	CB	GLN	C	139	-39.444	68.739	52.565	1.00	49.24	C	C
ATOM	2363	CG	GLN	C	139	-38.377	68.805	53.658	1.00	49.24	C	C
ATOM	2364	CD	GLN	C	139	-37.347	69.845	53.239	1.00	49.24	C	C
ATOM	2365	OE1	GLN	C	139	-37.691	70.888	52.685	1.00	49.24	C	O
ATOM	2366	NE2	GLN	C	139	-36.045	69.555	53.507	1.00	49.24	C	N
ATOM	2367	N	PRO	C	140	-37.628	66.067	51.696	1.00	43.32	C	N
ATOM	2368	CA	PRO	C	140	-37.387	64.674	51.961	1.00	43.32	C	C
ATOM	2369	C	PRO	C	140	-37.991	64.232	53.257	1.00	43.32	C	C
ATOM	2370	O	PRO	C	140	-37.502	64.657	54.304	1.00	43.32	C	O
ATOM	2371	CB	PRO	C	140	-35.869	64.536	52.007	1.00	43.32	C	C
ATOM	2372	CG	PRO	C	140	-35.422	65.909	52.550	1.00	43.32	C	C
ATOM	2373	CD	PRO	C	140	-36.469	66.891	51.992	1.00	43.32	C	C

Figure 10-37

ATOM	2374	N	ALA	C	141	-39.032	63.374	53.222	1.00	38.30	C N
ATOM	2375	CA	ALA	C	141	-39.557	62.870	54.455	1.00	38.30	C C
ATOM	2376	C	ALA	C	141	-38.545	61.943	55.043	1.00	38.30	C C
ATOM	2377	O	ALA	C	141	-38.180	62.068	56.210	1.00	38.30	C O
ATOM	2378	CB	ALA	C	141	-40.863	62.088	54.277	1.00	38.30	C C
ATOM	2379	N	LEU	C	142	-38.044	61.002	54.218	1.00	34.74	C N
ATOM	2380	CA	LEU	C	142	-37.062	60.054	54.663	1.00	34.74	C C
ATOM	2381	C	LEU	C	142	-36.529	59.334	53.468	1.00	34.74	C C
ATOM	2382	O	LEU	C	142	-37.214	59.188	52.456	1.00	34.74	C O
ATOM	2383	CB	LEU	C	142	-37.602	58.964	55.608	1.00	34.74	C C
ATOM	2384	CG	LEU	C	142	-37.993	59.451	57.014	1.00	34.74	C C
ATOM	2385	CD1	LEU	C	142	-38.517	58.287	57.874	1.00	34.74	C C
ATOM	2386	CD2	LEU	C	142	-36.832	60.196	57.693	1.00	34.74	C C
ATOM	2387	N	ARG	C	143	-35.267	58.872	53.562	1.00	32.75	C N
ATOM	2388	CA	ARG	C	143	-34.661	58.117	52.505	1.00	32.75	C C
ATOM	2389	C	ARG	C	143	-34.056	56.907	53.139	1.00	32.75	C C
ATOM	2390	O	ARG	C	143	-33.342	57.020	54.133	1.00	32.75	C O
ATOM	2391	CB	ARG	C	143	-33.526	58.887	51.804	1.00	32.75	C C
ATOM	2392	CG	ARG	C	143	-32.817	58.125	50.683	1.00	32.75	C C
ATOM	2393	CD	ARG	C	143	-31.705	58.943	50.022	1.00	32.75	C C
ATOM	2394	NE	ARG	C	143	-31.040	58.082	49.004	1.00	32.75	C N
ATOM	2395	CZ	ARG	C	143	-29.930	57.363	49.342	1.00	32.75	C C
ATOM	2396	NH1	ARG	C	143	-29.433	57.434	50.612	1.00	32.75	C N
ATOM	2397	NH2	ARG	C	143	-29.316	56.575	48.412	1.00	32.75	C N
ATOM	2398	N	ARG	C	144	-34.342	55.705	52.600	1.00	32.80	C N
ATOM	2399	CA	ARG	C	144	-33.732	54.549	53.188	1.00	32.80	C C
ATOM	2400	C	ARG	C	144	-33.286	53.634	52.091	1.00	32.80	C C
ATOM	2401	O	ARG	C	144	-34.080	53.229	51.243	1.00	32.80	C O
ATOM	2402	CB	ARG	C	144	-34.676	53.745	54.097	1.00	32.80	C C
ATOM	2403	CG	ARG	C	144	-34.001	52.543	54.758	1.00	32.80	C C
ATOM	2404	CD	ARG	C	144	-34.937	51.733	55.657	1.00	32.80	C C
ATOM	2405	NE	ARG	C	144	-35.915	51.050	54.764	1.00	32.80	C N
ATOM	2406	CZ	ARG	C	144	-36.781	50.128	55.277	1.00	32.80	C C
ATOM	2407	NH1	ARG	C	144	-36.754	49.832	56.609	1.00	32.80	C N
ATOM	2408	NH2	ARG	C	144	-37.674	49.504	54.456	1.00	32.80	C N
ATOM	2409	N	GLY	C	145	-31.992	53.257	52.103	1.00	35.33	C N
ATOM	2410	CA	GLY	C	145	-31.492	52.348	51.111	1.00	35.33	C C
ATOM	2411	C	GLY	C	145	-30.751	53.113	50.057	1.00	35.33	C C
ATOM	2412	O	GLY	C	145	-30.846	54.336	49.974	1.00	35.33	C O
ATOM	2413	N	ARG	C	146	-29.937	52.381	49.262	1.00	39.72	C N
ATOM	2414	CA	ARG	C	146	-29.120	52.912	48.203	1.00	39.72	C C
ATOM	2415	C	ARG	C	146	-29.924	53.401	47.036	1.00	39.72	C C
ATOM	2416	O	ARG	C	146	-29.735	54.523	46.572	1.00	39.72	C O
ATOM	2417	CB	ARG	C	146	-28.130	51.872	47.651	1.00	39.72	C C
ATOM	2418	CG	ARG	C	146	-28.815	50.631	47.076	1.00	39.72	C C
ATOM	2419	CD	ARG	C	146	-27.840	49.589	46.525	1.00	39.72	C C
ATOM	2420	NE	ARG	C	146	-28.645	48.442	46.021	1.00	39.72	C N
ATOM	2421	CZ	ARG	C	146	-28.976	47.421	46.864	1.00	39.72	C C
ATOM	2422	NH1	ARG	C	146	-28.570	47.452	48.167	1.00	39.72	C N
ATOM	2423	NH2	ARG	C	146	-29.714	46.368	46.405	1.00	39.72	C N
ATOM	2424	N	GLY	C	147	-30.869	52.584	46.536	1.00	44.41	C N
ATOM	2425	CA	GLY	C	147	-31.603	52.990	45.376	1.00	44.41	C C
ATOM	2426	C	GLY	C	147	-32.510	54.088	45.816	1.00	44.41	C C
ATOM	2427	O	GLY	C	147	-32.772	54.228	47.008	1.00	44.41	C O
ATOM	2428	N	LEU	C	148	-33.101	54.817	44.847	1.00	47.49	C N
ATOM	2429	CA	LEU	C	148	-33.991	55.900	45.167	1.00	47.49	C C
ATOM	2430	C	LEU	C	148	-33.376	56.936	46.064	1.00	47.49	C C
ATOM	2431	O	LEU	C	148	-33.144	56.719	47.251	1.00	47.49	C O
ATOM	2432	CB	LEU	C	148	-35.253	55.441	45.917	1.00	47.49	C C
ATOM	2433	CG	LEU	C	148	-36.070	54.348	45.212	1.00	47.49	C C
ATOM	2434	CD1	LEU	C	148	-35.272	53.039	45.118	1.00	47.49	C C
ATOM	2435	CD2	LEU	C	148	-37.428	54.149	45.899	1.00	47.49	C C
ATOM	2436	N	GLN	C	149	-33.004	58.084	45.458	1.00	46.88	C N
ATOM	2437	CA	GLN	C	149	-32.512	59.210	46.199	1.00	46.88	C C
ATOM	2438	C	GLN	C	149	-33.161	60.421	45.588	1.00	46.88	C C
ATOM	2439	O	GLN	C	149	-33.642	60.361	44.457	1.00	46.88	C O

Figure 10-38

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ATOM 2440  CB  GLN C 149     -30.987  59.347  46.085  1.00 46.88      C    C
ATOM 2441  CG  GLN C 149     -30.374  60.366  47.037  1.00 46.88      C    C
ATOM 2442  CD  GLN C 149     -28.865  60.270  46.881  1.00 46.88      C    C
ATOM 2443  OE1 GLN C 149     -28.364  59.430  46.134  1.00 46.88      C    O
ATOM 2444  NE2 GLN C 149     -28.119  61.146  47.606  1.00 46.88      C    N
ATOM 2445  N   ALA C 150     -33.225  61.554  46.321  1.00 45.60      C    N
ATOM 2446  CA  ALA C 150     -33.867  62.716  45.769  1.00 45.60      C    C
ATOM 2447  C   ALA C 150     -32.886  63.438  44.903  1.00 45.60      C    C
ATOM 2448  O   ALA C 150     -31.756  63.712  45.306  1.00 45.60      C    O
ATOM 2449  CB  ALA C 150     -34.374  63.705  46.832  1.00 45.60      C    C
ATOM 2450  N   GLN C 151     -33.324  63.791  43.680  1.00 44.75      C    N
ATOM 2451  CA  GLN C 151     -32.482  64.481  42.751  1.00 44.75      C    C
ATOM 2452  C   GLN C 151     -32.876  65.913  42.835  1.00 44.75      C    C
ATOM 2453  O   GLN C 151     -32.729  66.542  43.881  1.00 44.75      C    O
ATOM 2454  CB  GLN C 151     -32.659  64.017  41.295  1.00 44.75      C    C
ATOM 2455  CG  GLN C 151     -31.679  64.691  40.332  1.00 44.75      C    C
ATOM 2456  CD  GLN C 151     -31.939  64.155  38.933  1.00 44.75      C    C
ATOM 2457  OE1 GLN C 151     -31.977  64.914  37.966  1.00 44.75      C    O
ATOM 2458  NE2 GLN C 151     -32.107  62.811  38.814  1.00 44.75      C    N
ATOM 2459  N   GLY C 152     -33.360  66.490  41.722  1.00 44.25      C    N
ATOM 2460  CA  GLY C 152     -33.764  67.855  41.827  1.00 44.25      C    C
ATOM 2461  C   GLY C 152     -35.256  67.879  41.843  1.00 44.25      C    C
ATOM 2462  O   GLY C 152     -35.895  67.963  40.795  1.00 44.25      C    O
ATOM 2463  N   TYR C 153     -35.850  67.845  43.054  1.00 46.47      C    N
ATOM 2464  CA  TYR C 153     -37.279  67.915  43.156  1.00 46.47      C    C
ATOM 2465  C   TYR C 153     -37.914  66.630  42.657  1.00 46.47      C    C
ATOM 2466  O   TYR C 153     -39.131  66.444  42.713  1.00 46.47      C    O
ATOM 2467  CB  TYR C 153     -37.778  69.174  42.373  1.00 46.47      C    C
ATOM 2468  CG  TYR C 153     -39.189  69.011  41.935  1.00 46.47      C    C
ATOM 2469  CD1 TYR C 153     -40.254  69.278  42.763  1.00 46.47      C    C
ATOM 2470  CD2 TYR C 153     -39.425  68.525  40.670  1.00 46.47      C    C
ATOM 2471  CE1 TYR C 153     -41.538  69.074  42.311  1.00 46.47      C    C
ATOM 2472  CE2 TYR C 153     -40.703  68.319  40.217  1.00 46.47      C    C
ATOM 2473  CZ  TYR C 153     -41.763  68.596  41.043  1.00 46.47      C    C
ATOM 2474  OH  TYR C 153     -43.077  68.381  40.584  1.00 46.47      C    O
ATOM 2475  N   GLY C 154     -37.110  65.631  42.257  1.00 48.14      C    N
ATOM 2476  CA  GLY C 154     -37.752  64.453  41.745  1.00 48.14      C    C
ATOM 2477  C   GLY C 154     -37.065  63.255  42.315  1.00 48.14      C    C
ATOM 2478  O   GLY C 154     -35.974  63.361  42.874  1.00 48.14      C    O
ATOM 2479  N   VAL C 155     -37.684  62.060  42.182  1.00 50.13      C    N
ATOM 2480  CA  VAL C 155     -37.019  60.932  42.760  1.00 50.13      C    C
ATOM 2481  C   VAL C 155     -36.204  60.285  41.685  1.00 50.13      C    C
ATOM 2482  O   VAL C 155     -36.676  60.074  40.566  1.00 50.13      C    O
ATOM 2483  CB  VAL C 155     -37.919  59.892  43.354  1.00 50.13      C    C
ATOM 2484  CG1 VAL C 155     -37.007  58.783  43.912  1.00 50.13      C    C
ATOM 2485  CG2 VAL C 155     -38.829  60.549  44.409  1.00 50.13      C    C
ATOM 2486  N   ARG C 156     -34.940  59.952  42.009  1.00 52.84      C    N
ATOM 2487  CA  ARG C 156     -34.068  59.376  41.028  1.00 52.84      C    C
ATOM 2488  C   ARG C 156     -33.878  57.929  41.354  1.00 52.84      C    C
ATOM 2489  O   ARG C 156     -33.616  57.577  42.503  1.00 52.84      C    O
ATOM 2490  CB  ARG C 156     -32.662  60.005  41.010  1.00 52.84      C    C
ATOM 2491  CG  ARG C 156     -31.909  59.841  42.332  1.00 52.84      C    C
ATOM 2492  CD  ARG C 156     -30.469  60.358  42.298  1.00 52.84      C    C
ATOM 2493  NE  ARG C 156     -30.516  61.845  42.364  1.00 52.84      C    N
ATOM 2494  CZ  ARG C 156     -29.380  62.548  42.651  1.00 52.84      C    C
ATOM 2495  NH1 ARG C 156     -28.208  61.887  42.876  1.00 52.84      C    N
ATOM 2496  NH2 ARG C 156     -29.417  63.911  42.714  1.00 52.84      C    N
ATOM 2497  N   ILE C 157     -33.992  57.033  40.347  1.00 52.18      C    N
ATOM 2498  CA  ILE C 157     -33.772  55.662  40.706  1.00 52.18      C    C
ATOM 2499  C   ILE C 157     -32.380  55.236  40.372  1.00 52.18      C    C
ATOM 2500  O   ILE C 157     -31.905  55.367  39.247  1.00 52.18      C    O
ATOM 2501  CB  ILE C 157     -34.774  54.628  40.247  1.00 52.18      C    C
ATOM 2502  CG1 ILE C 157     -34.973  54.604  38.732  1.00 52.18      C    C
ATOM 2503  CG2 ILE C 157     -36.074  54.885  41.024  1.00 52.18      C    C
ATOM 2504  CD1 ILE C 157     -35.847  55.760  38.272  1.00 52.18      C    C
ATOM 2505  N   GLN C 158     -31.666  54.823  41.439  1.00 47.14      C    N
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Figure 10-39

ATOM	2506	CA	GLN	C	158	-30.313	54.344	41.453	1.00	47.14	C	C
ATOM	2507	C	GLN	C	158	-30.189	52.941	40.937	1.00	47.14	C	C
ATOM	2508	O	GLN	C	158	-29.200	52.606	40.289	1.00	47.14	C	O
ATOM	2509	CB	GLN	C	158	-29.711	54.354	42.868	1.00	47.14	C	C
ATOM	2510	CG	GLN	C	158	-29.560	55.755	43.463	1.00	47.14	C	C
ATOM	2511	CD	GLN	C	158	-28.406	56.445	42.750	1.00	47.14	C	C
ATOM	2512	OE1	GLN	C	158	-28.145	57.629	42.962	1.00	47.14	C	O
ATOM	2513	NE2	GLN	C	158	-27.691	55.684	41.878	1.00	47.14	C	N
ATOM	2514	N	ASP	C	159	-31.159	52.059	41.254	1.00	40.20	C	N
ATOM	2515	CA	ASP	C	159	-31.020	50.690	40.841	1.00	40.20	C	C
ATOM	2516	C	ASP	C	159	-32.264	50.261	40.129	1.00	40.20	C	C
ATOM	2517	O	ASP	C	159	-33.369	50.379	40.654	1.00	40.20	C	O
ATOM	2518	CB	ASP	C	159	-30.776	49.725	42.015	1.00	40.20	C	C
ATOM	2519	CG	ASP	C	159	-31.976	49.789	42.942	1.00	40.20	C	C
ATOM	2520	OD1	ASP	C	159	-32.451	50.922	43.230	1.00	40.20	C	O
ATOM	2521	OD2	ASP	C	159	-32.433	48.696	43.373	1.00	40.20	C	O
ATOM	2522	N	ALA	C	160	-32.108	49.726	38.902	1.00	33.14	C	N
ATOM	2523	CA	ALA	C	160	-33.252	49.323	38.139	1.00	33.14	C	C
ATOM	2524	C	ALA	C	160	-33.921	48.199	38.863	1.00	33.14	C	C
ATOM	2525	O	ALA	C	160	-33.263	47.375	39.498	1.00	33.14	C	O
ATOM	2526	CB	ALA	C	160	-32.908	48.827	36.723	1.00	33.14	C	C
ATOM	2527	N	GLY	C	161	-35.267	48.148	38.790	1.00	29.02	C	N
ATOM	2528	CA	GLY	C	161	-35.993	47.113	39.466	1.00	29.02	C	C
ATOM	2529	C	GLY	C	161	-37.448	47.469	39.428	1.00	29.02	C	C
ATOM	2530	O	GLY	C	161	-37.863	48.348	38.676	1.00	29.02	C	O
ATOM	2531	N	VAL	C	162	-38.264	46.778	40.251	1.00	31.57	C	N
ATOM	2532	CA	VAL	C	162	-39.679	47.018	40.275	1.00	31.57	C	C
ATOM	2533	C	VAL	C	162	-39.976	47.921	41.430	1.00	31.57	C	C
ATOM	2534	O	VAL	C	162	-39.428	47.753	42.518	1.00	31.57	C	O
ATOM	2535	CB	VAL	C	162	-40.481	45.768	40.474	1.00	31.57	C	C
ATOM	2536	CG1	VAL	C	162	-40.100	45.166	41.836	1.00	31.57	C	C
ATOM	2537	CG2	VAL	C	162	-41.974	46.117	40.346	1.00	31.57	C	C
ATOM	2538	N	TYR	C	163	-40.851	48.924	41.213	1.00	36.28	C	N
ATOM	2539	CA	TYR	C	163	-41.147	49.854	42.263	1.00	36.28	C	C
ATOM	2540	C	TYR	C	163	-42.622	50.063	42.393	1.00	36.28	C	C
ATOM	2541	O	TYR	C	163	-43.363	50.067	41.410	1.00	36.28	C	O
ATOM	2542	CB	TYR	C	163	-40.577	51.257	42.015	1.00	36.28	C	C
ATOM	2543	CG	TYR	C	163	-39.102	51.189	42.135	1.00	36.28	C	C
ATOM	2544	CD1	TYR	C	163	-38.318	50.746	41.094	1.00	36.28	C	C
ATOM	2545	CD2	TYR	C	163	-38.509	51.581	43.308	1.00	36.28	C	C
ATOM	2546	CE1	TYR	C	163	-36.950	50.695	41.225	1.00	36.28	C	C
ATOM	2547	CE2	TYR	C	163	-37.148	51.531	43.439	1.00	36.28	C	C
ATOM	2548	CZ	TYR	C	163	-36.366	51.085	42.405	1.00	36.28	C	C
ATOM	2549	OH	TYR	C	163	-34.967	51.042	42.565	1.00	36.28	C	O
ATOM	2550	N	LEU	C	164	-43.076	50.245	43.650	1.00	39.72	C	N
ATOM	2551	CA	LEU	C	164	-44.433	50.622	43.903	1.00	39.72	C	C
ATOM	2552	C	LEU	C	164	-44.357	52.106	44.069	1.00	39.72	C	C
ATOM	2553	O	LEU	C	164	-43.620	52.606	44.918	1.00	39.72	C	O
ATOM	2554	CB	LEU	C	164	-45.016	50.021	45.195	1.00	39.72	C	C
ATOM	2555	CG	LEU	C	164	-46.467	50.442	45.504	1.00	39.72	C	C
ATOM	2556	CD1	LEU	C	164	-47.444	49.928	44.436	1.00	39.72	C	C
ATOM	2557	CD2	LEU	C	164	-46.871	50.040	46.933	1.00	39.72	C	C
ATOM	2558	N	LEU	C	165	-45.099	52.844	43.227	1.00	44.09	C	N
ATOM	2559	CA	LEU	C	165	-45.051	54.279	43.206	1.00	44.09	C	C
ATOM	2560	C	LEU	C	165	-46.390	54.832	43.570	1.00	44.09	C	C
ATOM	2561	O	LEU	C	165	-47.408	54.414	43.022	1.00	44.09	C	O
ATOM	2562	CB	LEU	C	165	-44.717	54.782	41.792	1.00	44.09	C	C
ATOM	2563	CG	LEU	C	165	-44.967	56.276	41.528	1.00	44.09	C	C
ATOM	2564	CD1	LEU	C	165	-44.231	57.194	42.513	1.00	44.09	C	C
ATOM	2565	CD2	LEU	C	165	-44.665	56.592	40.053	1.00	44.09	C	C
ATOM	2566	N	TYR	C	166	-46.429	55.780	44.531	1.00	45.50	C	N
ATOM	2567	CA	TYR	C	166	-47.686	56.401	44.831	1.00	45.50	C	C
ATOM	2568	C	TYR	C	166	-47.513	57.870	45.067	1.00	45.50	C	C
ATOM	2569	O	TYR	C	166	-46.447	58.334	45.469	1.00	45.50	C	O
ATOM	2570	CB	TYR	C	166	-48.494	55.757	45.980	1.00	45.50	C	C
ATOM	2571	CG	TYR	C	166	-47.671	55.578	47.208	1.00	45.50	C	C

Figure 10-40

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ATOM 2572  CD1 TYR C 166     -46.873  54.464  47.336  1.00 45.50      C    C
ATOM 2573  CD2 TYR C 166     -47.712  56.491  48.236  1.00 45.50      C    C
ATOM 2574  CE1 TYR C 166     -46.114  54.269  48.464  1.00 45.50      C    C
ATOM 2575  CE2 TYR C 166     -46.955  56.300  49.368  1.00 45.50      C    C
ATOM 2576  CZ  TYR C 166     -46.153  55.189  49.483  1.00 45.50      C    C
ATOM 2577  OH  TYR C 166     -45.376  54.992  50.643  1.00 45.50      C    O
ATOM 2578  N   SER C 167     -48.575  58.650  44.765  1.00 46.49      C    N
ATOM 2579  CA  SER C 167     -48.516  60.073  44.957  1.00 46.49      C    C
ATOM 2580  C   SER C 167     -49.892  60.579  45.256  1.00 46.49      C    C
ATOM 2581  O   SER C 167     -50.878  60.120  44.679  1.00 46.49      C    O
ATOM 2582  CB  SER C 167     -48.021  60.841  43.719  1.00 46.49      C    C
ATOM 2583  OG  SER C 167     -48.956  60.709  42.659  1.00 46.49      C    O
ATOM 2584  N   GLN C 168     -49.982  61.567  46.172  1.00 49.22      C    N
ATOM 2585  CA  GLN C 168     -51.258  62.110  46.531  1.00 49.22      C    C
ATOM 2586  C   GLN C 168     -51.101  63.587  46.721  1.00 49.22      C    C
ATOM 2587  O   GLN C 168     -50.080  64.058  47.223  1.00 49.22      C    O
ATOM 2588  CB  GLN C 168     -51.789  61.526  47.847  1.00 49.22      C    C
ATOM 2589  CG  GLN C 168     -53.152  62.060  48.284  1.00 49.22      C    C
ATOM 2590  CD  GLN C 168     -53.487  61.364  49.594  1.00 49.22      C    C
ATOM 2591  OE1 GLN C 168     -52.824  61.586  50.602  1.00 49.22      C    O
ATOM 2592  NE2 GLN C 168     -54.526  60.486  49.581  1.00 49.22      C    N
ATOM 2593  N   VAL C 169     -52.123  64.360  46.305  1.00 51.74      C    N
ATOM 2594  CA  VAL C 169     -52.085  65.786  46.458  1.00 51.74      C    C
ATOM 2595  C   VAL C 169     -53.468  66.251  46.796  1.00 51.74      C    C
ATOM 2596  O   VAL C 169     -54.453  65.720  46.286  1.00 51.74      C    O
ATOM 2597  CB  VAL C 169     -51.654  66.476  45.201  1.00 51.74      C    C
ATOM 2598  CG1 VAL C 169     -52.465  65.880  44.042  1.00 51.74      C    C
ATOM 2599  CG2 VAL C 169     -51.858  67.993  45.368  1.00 51.74      C    C
ATOM 2600  N   LEU C 170     -53.572  67.271  47.671  1.00 56.37      C    N
ATOM 2601  CA  LEU C 170     -54.859  67.758  48.072  1.00 56.37      C    C
ATOM 2602  C   LEU C 170     -55.158  68.952  47.218  1.00 56.37      C    C
ATOM 2603  O   LEU C 170     -54.447  69.956  47.265  1.00 56.37      C    O
ATOM 2604  CB  LEU C 170     -54.882  68.194  49.552  1.00 56.37      C    C
ATOM 2605  CG  LEU C 170     -56.271  68.546  50.126  1.00 56.37      C    C
ATOM 2606  CD1 LEU C 170     -56.883  69.783  49.457  1.00 56.37      C    C
ATOM 2607  CD2 LEU C 170     -57.206  67.327  50.110  1.00 56.37      C    C
ATOM 2608  N   PHE C 171     -56.239  68.878  46.416  1.00 60.65      C    N
ATOM 2609  CA  PHE C 171     -56.552  69.958  45.526  1.00 60.65      C    C
ATOM 2610  C   PHE C 171     -57.540  70.878  46.185  1.00 60.65      C    C
ATOM 2611  O   PHE C 171     -58.634  70.468  46.569  1.00 60.65      C    O
ATOM 2612  CB  PHE C 171     -57.174  69.497  44.199  1.00 60.65      C    C
ATOM 2613  CG  PHE C 171     -56.154  68.690  43.473  1.00 60.65      C    C
ATOM 2614  CD1 PHE C 171     -55.111  69.307  42.821  1.00 60.65      C    C
ATOM 2615  CD2 PHE C 171     -56.247  67.318  43.433  1.00 60.65      C    C
ATOM 2616  CE1 PHE C 171     -54.170  68.565  42.147  1.00 60.65      C    C
ATOM 2617  CE2 PHE C 171     -55.310  66.571  42.760  1.00 60.65      C    C
ATOM 2618  CZ  PHE C 171     -54.270  67.196  42.115  1.00 60.65      C    C
ATOM 2619  N   GLN C 172     -57.096  72.129  46.431  1.00 67.06      C    N
ATOM 2620  CA  GLN C 172     -57.863  73.234  46.945  1.00 67.06      C    C
ATOM 2621  C   GLN C 172     -58.585  73.974  45.854  1.00 67.06      C    C
ATOM 2622  O   GLN C 172     -59.450  74.795  46.139  1.00 67.06      C    O
ATOM 2623  CB  GLN C 172     -57.045  74.256  47.762  1.00 67.06      C    C
ATOM 2624  CG  GLN C 172     -56.042  75.083  46.963  1.00 67.06      C    C
ATOM 2625  CD  GLN C 172     -55.338  76.026  47.927  1.00 67.06      C    C
ATOM 2626  OE1 GLN C 172     -55.312  75.794  49.135  1.00 67.06      C    O
ATOM 2627  NE2 GLN C 172     -54.746  77.122  47.379  1.00 67.06      C    N
ATOM 2628  N   ASP C 173     -58.155  73.793  44.588  1.00 71.27      C    N
ATOM 2629  CA  ASP C 173     -58.627  74.520  43.433  1.00 71.27      C    C
ATOM 2630  C   ASP C 173     -60.079  74.227  43.133  1.00 71.27      C    C
ATOM 2631  O   ASP C 173     -60.568  73.113  43.312  1.00 71.27      C    O
ATOM 2632  CB  ASP C 173     -57.794  74.169  42.180  1.00 71.27      C    C
ATOM 2633  CG  ASP C 173     -57.934  75.220  41.084  1.00 71.27      C    C
ATOM 2634  OD1 ASP C 173     -59.074  75.661  40.790  1.00 71.27      C    O
ATOM 2635  OD2 ASP C 173     -56.877  75.586  40.504  1.00 71.27      C    O
ATOM 2636  N   VAL C 174     -60.799  75.288  42.710  1.00 71.57      C    N
ATOM 2637  CA  VAL C 174     -62.183  75.380  42.314  1.00 71.57      C    C
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Figure 10-41

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ATOM 2638  C   VAL C 174     -62.448  74.806  40.944  1.00 71.57      C    C
ATOM 2639  O   VAL C 174     -63.586  74.450  40.640  1.00 71.57      C    O
ATOM 2640  CB  VAL C 174     -62.646  76.806  42.309  1.00 71.57      C    C
ATOM 2641  CG1 VAL C 174     -64.088  76.887  41.782  1.00 71.57      C    C
ATOM 2642  CG2 VAL C 174     -62.471  77.356  43.733  1.00 71.57      C    C
ATOM 2643  N   THR C 175     -61.421  74.744  40.071  1.00 70.41      C    N
ATOM 2644  CA  THR C 175     -61.527  74.354  38.686  1.00 70.41      C    C
ATOM 2645  C   THR C 175     -62.377  73.132  38.570  1.00 70.41      C    C
ATOM 2646  O   THR C 175     -62.495  72.346  39.506  1.00 70.41      C    O
ATOM 2647  CB  THR C 175     -60.202  73.965  38.102  1.00 70.41      C    C
ATOM 2648  OG1 THR C 175     -59.250  74.990  38.303  1.00 70.41      C    O
ATOM 2649  CG2 THR C 175     -60.377  73.746  36.598  1.00 70.41      C    C
ATOM 2650  N   PHE C 176     -62.968  72.927  37.375  1.00 61.11      C    N
ATOM 2651  CA  PHE C 176     -63.881  71.845  37.183  1.00 61.11      C    C
ATOM 2652  C   PHE C 176     -63.201  70.565  37.547  1.00 61.11      C    C
ATOM 2653  O   PHE C 176     -63.781  69.746  38.258  1.00 61.11      C    O
ATOM 2654  CB  PHE C 176     -64.411  71.754  35.742  1.00 61.11      C    C
ATOM 2655  CG  PHE C 176     -63.257  71.623  34.810  1.00 61.11      C    C
ATOM 2656  CD1 PHE C 176     -62.590  72.742  34.366  1.00 61.11      C    C
ATOM 2657  CD2 PHE C 176     -62.845  70.386  34.377  1.00 61.11      C    C
ATOM 2658  CE1 PHE C 176     -61.526  72.630  33.503  1.00 61.11      C    C
ATOM 2659  CE2 PHE C 176     -61.782  70.269  33.512  1.00 61.11      C    C
ATOM 2660  CZ  PHE C 176     -61.119  71.390  33.074  1.00 61.11      C    C
ATOM 2661  N   THR C 177     -61.957  70.339  37.084  1.00 51.28      C    N
ATOM 2662  CA  THR C 177     -61.324  69.120  37.497  1.00 51.28      C    C
ATOM 2663  C   THR C 177     -59.878  69.385  37.771  1.00 51.28      C    C
ATOM 2664  O   THR C 177     -59.269  70.272  37.176  1.00 51.28      C    O
ATOM 2665  CB  THR C 177     -61.373  68.030  36.467  1.00 51.28      C    C
ATOM 2666  OG1 THR C 177     -60.989  66.792  37.048  1.00 51.28      C    O
ATOM 2667  CG2 THR C 177     -60.411  68.392  35.325  1.00 51.28      C    C
ATOM 2668  N   MET C 178     -59.289  68.600  38.696  1.00 42.34      C    N
ATOM 2669  CA  MET C 178     -57.898  68.758  39.018  1.00 42.34      C    C
ATOM 2670  C   MET C 178     -57.305  67.384  39.099  1.00 42.34      C    C
ATOM 2671  O   MET C 178     -58.030  66.395  39.181  1.00 42.34      C    O
ATOM 2672  CB  MET C 178     -57.653  69.454  40.368  1.00 42.34      C    C
ATOM 2673  CG  MET C 178     -58.095  70.918  40.383  1.00 42.34      C    C
ATOM 2674  SD  MET C 178     -57.135  72.007  39.289  1.00 42.34      C    S
ATOM 2675  CE  MET C 178     -55.685  72.102  40.377  1.00 42.34      C    C
ATOM 2676  N   GLY C 179     -55.960  67.281  39.048  1.00 35.34      C    N
ATOM 2677  CA  GLY C 179     -55.347  65.986  39.126  1.00 35.34      C    C
ATOM 2678  C   GLY C 179     -53.877  66.129  38.887  1.00 35.34      C    C
ATOM 2679  O   GLY C 179     -53.388  67.207  38.550  1.00 35.34      C    O
ATOM 2680  N   GLN C 180     -53.127  65.018  39.055  1.00 34.51      C    N
ATOM 2681  CA  GLN C 180     -51.705  65.084  38.881  1.00 34.51      C    C
ATOM 2682  C   GLN C 180     -51.255  63.903  38.090  1.00 34.51      C    C
ATOM 2683  O   GLN C 180     -51.984  62.926  37.919  1.00 34.51      C    O
ATOM 2684  CB  GLN C 180     -50.941  65.070  40.216  1.00 34.51      C    C
ATOM 2685  CG  GLN C 180     -51.130  63.776  41.010  1.00 34.51      C    C
ATOM 2686  CD  GLN C 180     -50.417  63.934  42.346  1.00 34.51      C    C
ATOM 2687  OE1 GLN C 180     -50.340  62.997  43.139  1.00 34.51      C    O
ATOM 2688  NE2 GLN C 180     -49.883  65.157  42.606  1.00 34.51      C    N
ATOM 2689  N   VAL C 181     -50.024  63.986  37.553  1.00 37.80      C    N
ATOM 2690  CA  VAL C 181     -49.503  62.890  36.797  1.00 37.80      C    C
ATOM 2691  C   VAL C 181     -48.229  62.463  37.443  1.00 37.80      C    C
ATOM 2692  O   VAL C 181     -47.381  63.288  37.783  1.00 37.80      C    O
ATOM 2693  CB  VAL C 181     -49.188  63.246  35.374  1.00 37.80      C    C
ATOM 2694  CG1 VAL C 181     -50.497  63.636  34.667  1.00 37.80      C    C
ATOM 2695  CG2 VAL C 181     -48.126  64.360  35.368  1.00 37.80      C    C
ATOM 2696  N   VAL C 182     -48.077  61.145  37.667  1.00 42.17      C    N
ATOM 2697  CA  VAL C 182     -46.813  60.696  38.153  1.00 42.17      C    C
ATOM 2698  C   VAL C 182     -46.117  60.242  36.914  1.00 42.17      C    C
ATOM 2699  O   VAL C 182     -46.535  59.294  36.250  1.00 42.17      C    O
ATOM 2700  CB  VAL C 182     -46.884  59.601  39.184  1.00 42.17      C    C
ATOM 2701  CG1 VAL C 182     -47.533  58.332  38.603  1.00 42.17      C    C
ATOM 2702  CG2 VAL C 182     -45.463  59.409  39.733  1.00 42.17      C    C
ATOM 2703  N   SER C 183     -45.027  60.935  36.545  1.00 45.27      C    N
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Figure 10-42

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ATOM 2704  CA  SER C 183     -44.443  60.636  35.272  1.00 45.27      C    C
ATOM 2705  C   SER C 183     -43.056  60.120  35.438  1.00 45.27      C    C
ATOM 2706  O   SER C 183     -42.436  60.266  36.492  1.00 45.27      C    O
ATOM 2707  CB  SER C 183     -44.367  61.857  34.339  1.00 45.27      C    C
ATOM 2708  OG  SER C 183     -45.673  62.319  34.031  1.00 45.27      C    O
ATOM 2709  N   ARG C 184     -42.543  59.459  34.378  1.00 48.52      C    N
ATOM 2710  CA  ARG C 184     -41.199  58.982  34.453  1.00 48.52      C    C
ATOM 2711  C   ARG C 184     -40.384  59.664  33.410  1.00 48.52      C    C
ATOM 2712  O   ARG C 184     -40.758  59.718  32.239  1.00 48.52      C    O
ATOM 2713  CB  ARG C 184     -41.014  57.467  34.242  1.00 48.52      C    C
ATOM 2714  CG  ARG C 184     -41.403  56.942  32.863  1.00 48.52      C    C
ATOM 2715  CD  ARG C 184     -41.354  55.416  32.775  1.00 48.52      C    C
ATOM 2716  NE  ARG C 184     -39.926  54.990  32.795  1.00 48.52      C    N
ATOM 2717  CZ  ARG C 184     -39.276  54.785  31.614  1.00 48.52      C    C
ATOM 2718  NH1 ARG C 184     -39.923  55.022  30.435  1.00 48.52      C    N
ATOM 2719  NH2 ARG C 184     -37.987  54.336  31.606  1.00 48.52      C    N
ATOM 2720  N   GLU C 185     -39.237  60.228  33.834  1.00 48.59      C    N
ATOM 2721  CA  GLU C 185     -38.329  60.797  32.887  1.00 48.59      C    C
ATOM 2722  C   GLU C 185     -37.379  59.691  32.621  1.00 48.59      C    C
ATOM 2723  O   GLU C 185     -36.538  59.358  33.456  1.00 48.59      C    O
ATOM 2724  CB  GLU C 185     -37.519  61.988  33.430  1.00 48.59      C    C
ATOM 2725  CG  GLU C 185     -38.371  63.227  33.705  1.00 48.59      C    C
ATOM 2726  CD  GLU C 185     -38.896  63.740  32.371  1.00 48.59      C    C
ATOM 2727  OE1 GLU C 185     -38.587  63.103  31.329  1.00 48.59      C    O
ATOM 2728  OE2 GLU C 185     -39.615  64.775  32.377  1.00 48.59      C    O
ATOM 2729  N   GLY C 186     -37.496  59.080  31.435  1.00 50.68      C    N
ATOM 2730  CA  GLY C 186     -36.685  57.935  31.201  1.00 50.68      C    C
ATOM 2731  C   GLY C 186     -35.340  58.352  30.753  1.00 50.68      C    C
ATOM 2732  O   GLY C 186     -35.106  59.484  30.330  1.00 50.68      C    O
ATOM 2733  N   GLN C 187     -34.423  57.367  30.797  1.00 55.20      C    N
ATOM 2734  CA  GLN C 187     -33.145  57.536  30.195  1.00 55.20      C    C
ATOM 2735  C   GLN C 187     -33.558  57.706  28.774  1.00 55.20      C    C
ATOM 2736  O   GLN C 187     -32.948  58.447  28.006  1.00 55.20      C    O
ATOM 2737  CB  GLN C 187     -32.250  56.287  30.283  1.00 55.20      C    C
ATOM 2738  CG  GLN C 187     -32.791  55.079  29.513  1.00 55.20      C    C
ATOM 2739  CD  GLN C 187     -33.962  54.503  30.295  1.00 55.20      C    C
ATOM 2740  OE1 GLN C 187     -33.825  54.140  31.461  1.00 55.20      C    O
ATOM 2741  NE2 GLN C 187     -35.149  54.419  29.638  1.00 55.20      C    N
ATOM 2742  N   GLY C 188     -34.654  56.994  28.427  1.00 56.44      C    N
ATOM 2743  CA  GLY C 188     -35.351  57.103  27.185  1.00 56.44      C    C
ATOM 2744  C   GLY C 188     -36.290  58.282  27.334  1.00 56.44      C    C
ATOM 2745  O   GLY C 188     -35.894  59.310  27.878  1.00 56.44      C    O
ATOM 2746  N   ARG C 189     -37.550  58.174  26.843  1.00 56.19      C    N
ATOM 2747  CA  ARG C 189     -38.506  59.266  26.833  1.00 56.19      C    C
ATOM 2748  C   ARG C 189     -39.283  59.361  28.127  1.00 56.19      C    C
ATOM 2749  O   ARG C 189     -39.162  58.516  29.013  1.00 56.19      C    O
ATOM 2750  CB  ARG C 189     -39.517  59.161  25.675  1.00 56.19      C    C
ATOM 2751  CG  ARG C 189     -40.359  60.423  25.461  1.00 56.19      C    C
ATOM 2752  CD  ARG C 189     -41.319  60.329  24.271  1.00 56.19      C    C
ATOM 2753  NE  ARG C 189     -42.488  59.511  24.694  1.00 56.19      C    N
ATOM 2754  CZ  ARG C 189     -43.550  60.109  25.311  1.00 56.19      C    C
ATOM 2755  NH1 ARG C 189     -43.537  61.454  25.538  1.00 56.19      C    N
ATOM 2756  NH2 ARG C 189     -44.623  59.360  25.699  1.00 56.19      C    N
ATOM 2757  N   GLN C 190     -40.085  60.451  28.270  1.00 52.24      C    N
ATOM 2758  CA  GLN C 190     -40.885  60.702  29.444  1.00 52.24      C    C
ATOM 2759  C   GLN C 190     -42.300  60.302  29.171  1.00 52.24      C    C
ATOM 2760  O   GLN C 190     -42.856  60.606  28.119  1.00 52.24      C    O
ATOM 2761  CB  GLN C 190     -40.878  62.180  29.887  1.00 52.24      C    C
ATOM 2762  CG  GLN C 190     -41.513  63.151  28.886  1.00 52.24      C    C
ATOM 2763  CD  GLN C 190     -43.020  63.161  29.105  1.00 52.24      C    C
ATOM 2764  OE1 GLN C 190     -43.800  63.106  28.155  1.00 52.24      C    O
ATOM 2765  NE2 GLN C 190     -43.446  63.240  30.395  1.00 52.24      C    N
ATOM 2766  N   GLU C 191     -42.914  59.579  30.129  1.00 45.63      C    N
ATOM 2767  CA  GLU C 191     -44.275  59.151  29.979  1.00 45.63      C    C
ATOM 2768  C   GLU C 191     -44.909  59.228  31.330  1.00 45.63      C    C
ATOM 2769  O   GLU C 191     -44.215  59.311  32.341  1.00 45.63      C    O
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Figure 10-43

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ATOM 2770  CB  GLU C 191     -44.406  57.703  29.477  1.00 45.63      C    C
ATOM 2771  CG  GLU C 191     -45.840  57.285  29.146  1.00 45.63      C    C
ATOM 2772  CD  GLU C 191     -45.804  55.841  28.665  1.00 45.63      C    C
ATOM 2773  OE1 GLU C 191     -44.725  55.203  28.793  1.00 45.63      C    O
ATOM 2774  OE2 GLU C 191     -46.852  55.357  28.161  1.00 45.63      C    O
ATOM 2775  N   THR C 192     -46.257  59.213  31.388  1.00 41.18      C    N
ATOM 2776  CA  THR C 192     -46.902  59.301  32.668  1.00 41.18      C    C
ATOM 2777  C   THR C 192     -47.353  57.927  33.047  1.00 41.18      C    C
ATOM 2778  O   THR C 192     -48.126  57.292  32.330  1.00 41.18      C    O
ATOM 2779  CB  THR C 192     -48.120  60.178  32.681  1.00 41.18      C    C
ATOM 2780  OG1 THR C 192     -49.143  59.618  31.870  1.00 41.18      C    O
ATOM 2781  CG2 THR C 192     -47.731  61.569  32.155  1.00 41.18      C    C
ATOM 2782  N   LEU C 193     -46.826  57.415  34.177  1.00 40.86      C    N
ATOM 2783  CA  LEU C 193     -47.171  56.102  34.638  1.00 40.86      C    C
ATOM 2784  C   LEU C 193     -48.595  56.060  35.099  1.00 40.86      C    C
ATOM 2785  O   LEU C 193     -49.372  55.220  34.648  1.00 40.86      C    O
ATOM 2786  CB  LEU C 193     -46.292  55.646  35.816  1.00 40.86      C    C
ATOM 2787  CG  LEU C 193     -44.801  55.497  35.450  1.00 40.86      C    C
ATOM 2788  CD1 LEU C 193     -44.190  56.837  35.016  1.00 40.86      C    C
ATOM 2789  CD2 LEU C 193     -44.011  54.841  36.591  1.00 40.86      C    C
ATOM 2790  N   PHE C 194     -48.986  56.991  35.994  1.00 41.35      C    N
ATOM 2791  CA  PHE C 194     -50.323  56.940  36.514  1.00 41.35      C    C
ATOM 2792  C   PHE C 194     -50.787  58.352  36.685  1.00 41.35      C    C
ATOM 2793  O   PHE C 194     -49.976  59.269  36.794  1.00 41.35      C    O
ATOM 2794  CB  PHE C 194     -50.404  56.285  37.903  1.00 41.35      C    C
ATOM 2795  CG  PHE C 194     -49.769  54.939  37.801  1.00 41.35      C    C
ATOM 2796  CD1 PHE C 194     -50.479  53.850  37.356  1.00 41.35      C    C
ATOM 2797  CD2 PHE C 194     -48.444  54.777  38.140  1.00 41.35      C    C
ATOM 2798  CE1 PHE C 194     -49.879  52.615  37.264  1.00 41.35      C    C
ATOM 2799  CE2 PHE C 194     -47.839  53.546  38.052  1.00 41.35      C    C
ATOM 2800  CZ  PHE C 194     -48.558  52.461  37.611  1.00 41.35      C    C
ATOM 2801  N   ARG C 195     -52.120  58.565  36.706  1.00 42.11      C    N
ATOM 2802  CA  ARG C 195     -52.626  59.897  36.872  1.00 42.11      C    C
ATOM 2803  C   ARG C 195     -53.821  59.841  37.768  1.00 42.11      C    C
ATOM 2804  O   ARG C 195     -54.458  58.798  37.912  1.00 42.11      C    O
ATOM 2805  CB  ARG C 195     -53.050  60.564  35.551  1.00 42.11      C    C
ATOM 2806  CG  ARG C 195     -54.141  59.807  34.792  1.00 42.11      C    C
ATOM 2807  CD  ARG C 195     -54.481  60.438  33.440  1.00 42.11      C    C
ATOM 2808  NE  ARG C 195     -55.549  59.609  32.810  1.00 42.11      C    N
ATOM 2809  CZ  ARG C 195     -56.864  59.870  33.074  1.00 42.11      C    C
ATOM 2810  NH1 ARG C 195     -57.204  60.899  33.904  1.00 42.11      C    N
ATOM 2811  NH2 ARG C 195     -57.838  59.100  32.505  1.00 42.11      C    N
ATOM 2812  N   CYS C 196     -54.144  60.981  38.414  1.00 42.45      C    N
ATOM 2813  CA  CYS C 196     -55.260  61.014  39.312  1.00 42.45      C    C
ATOM 2814  C   CYS C 196     -56.089  62.193  38.895  1.00 42.45      C    C
ATOM 2815  O   CYS C 196     -55.549  63.233  38.519  1.00 42.45      C    O
ATOM 2816  CB  CYS C 196     -54.794  61.198  40.771  1.00 42.45      C    C
ATOM 2817  SG  CYS C 196     -55.935  60.531  42.019  1.00 42.45      C    S
ATOM 2818  N   ILE C 197     -57.431  62.051  38.896  1.00 39.20      C    N
ATOM 2819  CA  ILE C 197     -58.261  63.157  38.502  1.00 39.20      C    C
ATOM 2820  C   ILE C 197     -59.414  63.251  39.449  1.00 39.20      C    C
ATOM 2821  O   ILE C 197     -59.977  62.235  39.856  1.00 39.20      C    O
ATOM 2822  CB  ILE C 197     -58.832  63.014  37.123  1.00 39.20      C    C
ATOM 2823  CG1 ILE C 197     -59.499  64.327  36.680  1.00 39.20      C    C
ATOM 2824  CG2 ILE C 197     -59.779  61.803  37.128  1.00 39.20      C    C
ATOM 2825  CD1 ILE C 197     -58.516  65.483  36.504  1.00 39.20      C    C
ATOM 2826  N   ARG C 198     -59.795  64.487  39.836  1.00 37.08      C    N
ATOM 2827  CA  ARG C 198     -60.909  64.628  40.725  1.00 37.08      C    C
ATOM 2828  C   ARG C 198     -61.694  65.833  40.313  1.00 37.08      C    C
ATOM 2829  O   ARG C 198     -61.129  66.872  39.976  1.00 37.08      C    O
ATOM 2830  CB  ARG C 198     -60.498  64.836  42.193  1.00 37.08      C    C
ATOM 2831  CG  ARG C 198     -61.683  64.913  43.156  1.00 37.08      C    C
ATOM 2832  CD  ARG C 198     -62.436  63.589  43.297  1.00 37.08      C    C
ATOM 2833  NE  ARG C 198     -61.482  62.591  43.858  1.00 37.08      C    N
ATOM 2834  CZ  ARG C 198     -61.911  61.330  44.159  1.00 37.08      C    C
ATOM 2835  NH1 ARG C 198     -63.215  60.985  43.949  1.00 37.08      C    N
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Figure 10-44

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ATOM 2836  NH2 ARG C 198     -61.036  60.415  44.669  1.00 37.08      C    N
ATOM 2837  N   SER C 199     -63.037  65.716  40.324  1.00 34.75      C    N
ATOM 2838  CA  SER C 199     -63.848  66.848  39.988  1.00 34.75      C    C
ATOM 2839  C   SER C 199     -63.847  67.734  41.187  1.00 34.75      C    C
ATOM 2840  O   SER C 199     -63.773  67.261  42.319  1.00 34.75      C    O
ATOM 2841  CB  SER C 199     -65.312  66.497  39.670  1.00 34.75      C    C
ATOM 2842  OG  SER C 199     -66.037  67.675  39.349  1.00 34.75      C    O
ATOM 2843  N   MET C 200     -63.942  69.057  40.966  1.00 33.48      C    N
ATOM 2844  CA  MET C 200     -63.897  69.980  42.066  1.00 33.48      C    C
ATOM 2845  C   MET C 200     -65.208  70.699  42.111  1.00 33.48      C    C
ATOM 2846  O   MET C 200     -65.812  70.994  41.081  1.00 33.48      C    O
ATOM 2847  CB  MET C 200     -62.816  71.066  41.918  1.00 33.48      C    C
ATOM 2848  CG  MET C 200     -61.369  70.553  41.913  1.00 33.48      C    C
ATOM 2849  SD  MET C 200     -60.756  69.908  43.500  1.00 33.48      C    S
ATOM 2850  CE  MET C 200     -61.397  68.224  43.284  1.00 33.48      C    C
ATOM 2851  N   PRO C 201     -65.654  70.965  43.308  1.00 34.55      C    N
ATOM 2852  CA  PRO C 201     -66.878  71.688  43.531  1.00 34.55      C    C
ATOM 2853  C   PRO C 201     -66.651  73.144  43.286  1.00 34.55      C    C
ATOM 2854  O   PRO C 201     -65.499  73.555  43.161  1.00 34.55      C    O
ATOM 2855  CB  PRO C 201     -67.309  71.360  44.962  1.00 34.55      C    C
ATOM 2856  CG  PRO C 201     -66.063  70.738  45.617  1.00 34.55      C    C
ATOM 2857  CD  PRO C 201     -65.309  70.116  44.435  1.00 34.55      C    C
ATOM 2858  N   SER C 202     -67.734  73.946  43.226  1.00 35.65      C    N
ATOM 2859  CA  SER C 202     -67.591  75.341  42.932  1.00 35.65      C    C
ATOM 2860  C   SER C 202     -66.665  75.936  43.941  1.00 35.65      C    C
ATOM 2861  O   SER C 202     -66.344  75.310  44.950  1.00 35.65      C    O
ATOM 2862  CB  SER C 202     -68.914  76.125  42.989  1.00 35.65      C    C
ATOM 2863  OG  SER C 202     -68.682  77.493  42.687  1.00 35.65      C    O
ATOM 2864  N   HIS C 203     -66.184  77.163  43.659  1.00 37.84      C    N
ATOM 2865  CA  HIS C 203     -65.275  77.840  44.539  1.00 37.84      C    C
ATOM 2866  C   HIS C 203     -65.960  78.038  45.850  1.00 37.84      C    C
ATOM 2867  O   HIS C 203     -65.354  77.833  46.900  1.00 37.84      C    O
ATOM 2868  CB  HIS C 203     -64.827  79.220  44.015  1.00 37.84      C    C
ATOM 2869  CG  HIS C 203     -63.975  79.982  44.992  1.00 37.84      C    C
ATOM 2870  ND1 HIS C 203     -62.607  79.871  45.096  1.00 37.84      C    N
ATOM 2871  CD2 HIS C 203     -64.345  80.892  45.935  1.00 37.84      C    C
ATOM 2872  CE1 HIS C 203     -62.220  80.713  46.088  1.00 37.84      C    C
ATOM 2873  NE2 HIS C 203     -63.241  81.354  46.627  1.00 37.84      C    N
ATOM 2874  N   PRO C 204     -67.203  78.426  45.842  1.00 38.77      C    N
ATOM 2875  CA  PRO C 204     -67.886  78.576  47.091  1.00 38.77      C    C
ATOM 2876  C   PRO C 204     -68.081  77.226  47.688  1.00 38.77      C    C
ATOM 2877  O   PRO C 204     -68.433  77.141  48.863  1.00 38.77      C    O
ATOM 2878  CB  PRO C 204     -69.181  79.317  46.773  1.00 38.77      C    C
ATOM 2879  CG  PRO C 204     -68.823  80.148  45.529  1.00 38.77      C    C
ATOM 2880  CD  PRO C 204     -67.735  79.324  44.826  1.00 38.77      C    C
ATOM 2881  N   ASP C 205     -67.865  76.158  46.898  1.00 39.11      C    N
ATOM 2882  CA  ASP C 205     -68.127  74.854  47.416  1.00 39.11      C    C
ATOM 2883  C   ASP C 205     -66.951  74.355  48.185  1.00 39.11      C    C
ATOM 2884  O   ASP C 205     -66.839  73.146  48.383  1.00 39.11      C    O
ATOM 2885  CB  ASP C 205     -68.440  73.820  46.321  1.00 39.11      C    C
ATOM 2886  CG  ASP C 205     -69.824  74.127  45.767  1.00 39.11      C    C
ATOM 2887  OD1 ASP C 205     -70.505  75.020  46.337  1.00 39.11      C    O
ATOM 2888  OD2 ASP C 205     -70.220  73.465  44.771  1.00 39.11      C    O
ATOM 2889  N   ARG C 206     -66.080  75.277  48.658  1.00 38.97      C    N
ATOM 2890  CA  ARG C 206     -64.943  74.952  49.481  1.00 38.97      C    C
ATOM 2891  C   ARG C 206     -64.251  73.759  48.913  1.00 38.97      C    C
ATOM 2892  O   ARG C 206     -64.276  72.684  49.510  1.00 38.97      C    O
ATOM 2893  CB  ARG C 206     -65.323  74.638  50.939  1.00 38.97      C    C
ATOM 2894  CG  ARG C 206     -65.978  75.818  51.659  1.00 38.97      C    C
ATOM 2895  CD  ARG C 206     -64.980  76.829  52.227  1.00 38.97      C    C
ATOM 2896  NE  ARG C 206     -65.769  77.905  52.890  1.00 38.97      C    N
ATOM 2897  CZ  ARG C 206     -65.201  78.672  53.865  1.00 38.97      C    C
ATOM 2898  NH1 ARG C 206     -63.910  78.445  54.246  1.00 38.97      C    N
ATOM 2899  NH2 ARG C 206     -65.923  79.666  54.460  1.00 38.97      C    N
ATOM 2900  N   ALA C 207     -63.645  73.901  47.723  1.00 37.60      C    N
ATOM 2901  CA  ALA C 207     -63.055  72.744  47.122  1.00 37.60      C    C
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Figure 10-45

ATOM	2902	C	ALA	C	207	-62.014	72.194	48.038	1.00	37.60	C C
ATOM	2903	O	ALA	C	207	-61.077	72.888	48.426	1.00	37.60	C O
ATOM	2904	CB	ALA	C	207	-62.386	73.032	45.767	1.00	37.60	C C
ATOM	2905	N	TYR	C	208	-62.206	70.928	48.463	1.00	38.50	C N
ATOM	2906	CA	TYR	C	208	-61.203	70.224	49.201	1.00	38.50	C C
ATOM	2907	C	TYR	C	208	-61.278	68.798	48.762	1.00	38.50	C C
ATOM	2908	O	TYR	C	208	-62.186	68.071	49.165	1.00	38.50	C O
ATOM	2909	CB	TYR	C	208	-61.400	70.247	50.729	1.00	38.50	C C
ATOM	2910	CG	TYR	C	208	-61.134	71.633	51.211	1.00	38.50	C C
ATOM	2911	CD1	TYR	C	208	-62.126	72.585	51.205	1.00	38.50	C C
ATOM	2912	CD2	TYR	C	208	-59.886	71.982	51.674	1.00	38.50	C C
ATOM	2913	CE1	TYR	C	208	-61.882	73.862	51.649	1.00	38.50	C C
ATOM	2914	CE2	TYR	C	208	-59.633	73.258	52.120	1.00	38.50	C C
ATOM	2915	CZ	TYR	C	208	-60.632	74.201	52.108	1.00	38.50	C C
ATOM	2916	OH	TYR	C	208	-60.377	75.511	52.566	1.00	38.50	C O
ATOM	2917	N	ASN	C	209	-60.326	68.340	47.927	1.00	40.97	C N
ATOM	2918	CA	ASN	C	209	-60.378	66.967	47.523	1.00	40.97	C C
ATOM	2919	C	ASN	C	209	-58.977	66.476	47.395	1.00	40.97	C C
ATOM	2920	O	ASN	C	209	-58.143	67.115	46.758	1.00	40.97	C O
ATOM	2921	CB	ASN	C	209	-61.053	66.731	46.159	1.00	40.97	C C
ATOM	2922	CG	ASN	C	209	-62.552	66.946	46.314	1.00	40.97	C C
ATOM	2923	OD1	ASN	C	209	-63.164	67.705	45.565	1.00	40.97	C O
ATOM	2924	ND2	ASN	C	209	-63.165	66.249	47.308	1.00	40.97	C N
ATOM	2925	N	SER	C	210	-58.685	65.304	47.987	1.00	43.32	C N
ATOM	2926	CA	SER	C	210	-57.367	64.759	47.879	1.00	43.32	C C
ATOM	2927	C	SER	C	210	-57.455	63.674	46.856	1.00	43.32	C C
ATOM	2928	O	SER	C	210	-58.515	63.081	46.666	1.00	43.32	C O
ATOM	2929	CB	SER	C	210	-56.842	64.135	49.184	1.00	43.32	C C
ATOM	2930	OG	SER	C	210	-57.641	63.018	49.548	1.00	43.32	C O
ATOM	2931	N	CYS	C	211	-56.346	63.406	46.137	1.00	46.49	C N
ATOM	2932	CA	CYS	C	211	-56.416	62.403	45.114	1.00	46.49	C C
ATOM	2933	C	CYS	C	211	-55.212	61.526	45.300	1.00	46.49	C C
ATOM	2934	O	CYS	C	211	-54.091	62.016	45.429	1.00	46.49	C O
ATOM	2935	CB	CYS	C	211	-56.368	63.029	43.705	1.00	46.49	C C
ATOM	2936	SG	CYS	C	211	-57.200	62.055	42.415	1.00	46.49	C S
ATOM	2937	N	TYR	C	212	-55.422	60.193	45.331	1.00	44.78	C N
ATOM	2938	CA	TYR	C	212	-54.354	59.258	45.574	1.00	44.78	C C
ATOM	2939	C	TYR	C	212	-54.339	58.254	44.460	1.00	44.78	C C
ATOM	2940	O	TYR	C	212	-55.387	57.772	44.034	1.00	44.78	C O
ATOM	2941	CB	TYR	C	212	-54.600	58.494	46.891	1.00	44.78	C C
ATOM	2942	CG	TYR	C	212	-53.631	57.375	47.071	1.00	44.78	C C
ATOM	2943	CD1	TYR	C	212	-53.898	56.144	46.516	1.00	44.78	C C
ATOM	2944	CD2	TYR	C	212	-52.471	57.541	47.793	1.00	44.78	C C
ATOM	2945	CE1	TYR	C	212	-53.027	55.092	46.677	1.00	44.78	C C
ATOM	2946	CE2	TYR	C	212	-51.596	56.492	47.958	1.00	44.78	C C
ATOM	2947	CZ	TYR	C	212	-51.873	55.266	47.401	1.00	44.78	C C
ATOM	2948	OH	TYR	C	212	-50.978	54.188	47.570	1.00	44.78	C O
ATOM	2949	N	SER	C	213	-53.138	57.923	43.946	1.00	38.20	C N
ATOM	2950	CA	SER	C	213	-53.033	56.932	42.912	1.00	38.20	C C
ATOM	2951	C	SER	C	213	-51.707	56.261	43.073	1.00	38.20	C C
ATOM	2952	O	SER	C	213	-50.731	56.891	43.479	1.00	38.20	C O
ATOM	2953	CB	SER	C	213	-53.081	57.521	41.493	1.00	38.20	C C
ATOM	2954	OG	SER	C	213	-52.974	56.482	40.529	1.00	38.20	C O
ATOM	2955	N	ALA	C	214	-51.637	54.950	42.761	1.00	32.33	C N
ATOM	2956	CA	ALA	C	214	-50.396	54.246	42.912	1.00	32.33	C C
ATOM	2957	C	ALA	C	214	-50.370	53.139	41.911	1.00	32.33	C C
ATOM	2958	O	ALA	C	214	-51.405	52.741	41.380	1.00	32.33	C O
ATOM	2959	CB	ALA	C	214	-50.222	53.606	44.299	1.00	32.33	C C
ATOM	2960	N	GLY	C	215	-49.163	52.617	41.621	1.00	26.56	C N
ATOM	2961	CA	GLY	C	215	-49.053	51.547	40.675	1.00	26.56	C C
ATOM	2962	C	GLY	C	215	-47.664	51.007	40.758	1.00	26.56	C C
ATOM	2963	O	GLY	C	215	-46.815	51.541	41.470	1.00	26.56	C O
ATOM	2964	N	VAL	C	216	-47.403	49.912	40.019	1.00	26.90	C N
ATOM	2965	CA	VAL	C	216	-46.100	49.317	40.029	1.00	26.90	C C
ATOM	2966	C	VAL	C	216	-45.532	49.497	38.659	1.00	26.90	C C
ATOM	2967	O	VAL	C	216	-46.248	49.393	37.664	1.00	26.90	C O

Figure 10-46

ATOM	2968	CB	VAL	C	216	-46.130	47.845	40.319	1.00	26.90	C	C
ATOM	2969	CG1	VAL	C	216	-46.909	47.143	39.195	1.00	26.90	C	C
ATOM	2970	CG2	VAL	C	216	-44.686	47.346	40.483	1.00	26.90	C	C
ATOM	2971	N	PHE	C	217	-44.223	49.807	38.575	1.00	30.85	C	N
ATOM	2972	CA	PHE	C	217	-43.627	49.987	37.285	1.00	30.85	C	C
ATOM	2973	C	PHE	C	217	-42.197	49.571	37.400	1.00	30.85	C	C
ATOM	2974	O	PHE	C	217	-41.606	49.627	38.478	1.00	30.85	C	O
ATOM	2975	CB	PHE	C	217	-43.662	51.454	36.818	1.00	30.85	C	C
ATOM	2976	CG	PHE	C	217	-43.234	51.518	35.392	1.00	30.85	C	C
ATOM	2977	CD1	PHE	C	217	-44.119	51.188	34.391	1.00	30.85	C	C
ATOM	2978	CD2	PHE	C	217	-41.964	51.922	35.051	1.00	30.85	C	C
ATOM	2979	CE1	PHE	C	217	-43.742	51.247	33.071	1.00	30.85	C	C
ATOM	2980	CE2	PHE	C	217	-41.582	51.985	33.731	1.00	30.85	C	C
ATOM	2981	CZ	PHE	C	217	-42.470	51.646	32.739	1.00	30.85	C	C
ATOM	2982	N	HIS	C	218	-41.597	49.130	36.278	1.00	33.56	C	N
ATOM	2983	CA	HIS	C	218	-40.223	48.723	36.320	1.00	33.56	C	C
ATOM	2984	C	HIS	C	218	-39.425	49.893	35.849	1.00	33.56	C	C
ATOM	2985	O	HIS	C	218	-39.608	50.363	34.726	1.00	33.56	C	O
ATOM	2986	CB	HIS	C	218	-39.909	47.540	35.389	1.00	33.56	C	C
ATOM	2987	CG	HIS	C	218	-38.474	47.109	35.426	1.00	33.56	C	C
ATOM	2988	ND1	HIS	C	218	-37.949	46.247	36.367	1.00	33.56	C	N
ATOM	2989	CD2	HIS	C	218	-37.439	47.437	34.607	1.00	33.56	C	C
ATOM	2990	CE1	HIS	C	218	-36.634	46.099	36.071	1.00	33.56	C	C
ATOM	2991	NE2	HIS	C	218	-36.276	46.801	35.010	1.00	33.56	C	N
ATOM	2992	N	LEU	C	219	-38.523	50.403	36.711	1.00	36.08	C	N
ATOM	2993	CA	LEU	C	219	-37.748	51.545	36.324	1.00	36.08	C	C
ATOM	2994	C	LEU	C	219	-36.334	51.120	36.099	1.00	36.08	C	C
ATOM	2995	O	LEU	C	219	-35.860	50.143	36.677	1.00	36.08	C	O
ATOM	2996	CB	LEU	C	219	-37.715	52.699	37.345	1.00	36.08	C	C
ATOM	2997	CG	LEU	C	219	-39.095	53.284	37.710	1.00	36.08	C	C
ATOM	2998	CD1	LEU	C	219	-39.924	53.600	36.455	1.00	36.08	C	C
ATOM	2999	CD2	LEU	C	219	-39.833	52.432	38.750	1.00	36.08	C	C
ATOM	3000	N	HIS	C	220	-35.625	51.861	35.223	1.00	34.21	C	N
ATOM	3001	CA	HIS	C	220	-34.260	51.552	34.925	1.00	34.21	C	C
ATOM	3002	C	HIS	C	220	-33.418	52.555	35.637	1.00	34.21	C	C
ATOM	3003	O	HIS	C	220	-33.855	53.671	35.918	1.00	34.21	C	O
ATOM	3004	CB	HIS	C	220	-33.924	51.663	33.428	1.00	34.21	C	C
ATOM	3005	CG	HIS	C	220	-34.705	50.705	32.575	1.00	34.21	C	C
ATOM	3006	ND1	HIS	C	220	-36.000	50.924	32.162	1.00	34.21	C	N
ATOM	3007	CD2	HIS	C	220	-34.348	49.499	32.055	1.00	34.21	C	C
ATOM	3008	CE1	HIS	C	220	-36.361	49.848	31.418	1.00	34.21	C	C
ATOM	3009	NE2	HIS	C	220	-35.391	48.957	31.325	1.00	34.21	C	N
ATOM	3010	N	GLN	C	221	-32.171	52.171	35.955	1.00	31.81	C	N
ATOM	3011	CA	GLN	C	221	-31.313	53.069	36.662	1.00	31.81	C	C
ATOM	3012	C	GLN	C	221	-31.140	54.278	35.806	1.00	31.81	C	C
ATOM	3013	O	GLN	C	221	-30.963	54.176	34.593	1.00	31.81	C	O
ATOM	3014	CB	GLN	C	221	-29.916	52.492	36.935	1.00	31.81	C	C
ATOM	3015	CG	GLN	C	221	-28.992	53.450	37.688	1.00	31.81	C	C
ATOM	3016	CD	GLN	C	221	-27.657	52.745	37.884	1.00	31.81	C	C
ATOM	3017	OE1	GLN	C	221	-27.466	51.620	37.426	1.00	31.81	C	O
ATOM	3018	NE2	GLN	C	221	-26.705	53.423	38.577	1.00	31.81	C	N
ATOM	3019	N	GLY	C	222	-31.194	55.466	36.438	1.00	32.05	C	N
ATOM	3020	CA	GLY	C	222	-31.020	56.692	35.723	1.00	32.05	C	C
ATOM	3021	C	GLY	C	222	-32.354	57.333	35.519	1.00	32.05	C	C
ATOM	3022	O	GLY	C	222	-32.431	58.525	35.227	1.00	32.05	C	O
ATOM	3023	N	ASP	C	223	-33.450	56.569	35.684	1.00	33.04	C	N
ATOM	3024	CA	ASP	C	223	-34.742	57.153	35.474	1.00	33.04	C	C
ATOM	3025	C	ASP	C	223	-35.057	58.060	36.620	1.00	33.04	C	C
ATOM	3026	O	ASP	C	223	-34.410	58.011	37.665	1.00	33.04	C	O
ATOM	3027	CB	ASP	C	223	-35.901	56.139	35.353	1.00	33.04	C	C
ATOM	3028	CG	ASP	C	223	-35.846	55.453	33.995	1.00	33.04	C	C
ATOM	3029	OD1	ASP	C	223	-35.132	55.968	33.095	1.00	33.04	C	O
ATOM	3030	OD2	ASP	C	223	-36.529	54.405	33.840	1.00	33.04	C	O
ATOM	3031	N	ILE	C	224	-36.057	58.947	36.428	1.00	35.91	C	N
ATOM	3032	CA	ILE	C	224	-36.470	59.851	37.459	1.00	35.91	C	C
ATOM	3033	C	ILE	C	224	-37.965	59.872	37.457	1.00	35.91	C	C

Figure 10-47

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ATOM 3034  O   ILE C 224     -38.590  59.758  36.405  1.00 35.91      C    O
ATOM 3035  CB  ILE C 224     -36.046  61.268  37.217  1.00 35.91      C    C
ATOM 3036  CG1 ILE C 224     -34.516  61.377  37.156  1.00 35.91      C    C
ATOM 3037  CG2 ILE C 224     -36.686  62.147  38.305  1.00 35.91      C    C
ATOM 3038  CD1 ILE C 224     -34.032  62.715  36.601  1.00 35.91      C    C
ATOM 3039  N   LEU C 225     -38.588  60.001  38.644  1.00 39.64      C    N
ATOM 3040  CA  LEU C 225     -40.014  60.119  38.656  1.00 39.64      C    C
ATOM 3041  C   LEU C 225     -40.348  61.450  39.245  1.00 39.64      C    C
ATOM 3042  O   LEU C 225     -39.662  61.929  40.149  1.00 39.64      C    O
ATOM 3043  CB  LEU C 225     -40.766  58.978  39.369  1.00 39.64      C    C
ATOM 3044  CG  LEU C 225     -40.685  57.652  38.574  1.00 39.64      C    C
ATOM 3045  CD1 LEU C 225     -41.414  56.481  39.233  1.00 39.64      C    C
ATOM 3046  CD2 LEU C 225     -41.211  57.849  37.155  1.00 39.64      C    C
ATOM 3047  N   SER C 226     -41.392  62.109  38.700  1.00 40.89      C    N
ATOM 3048  CA  SER C 226     -41.768  63.406  39.185  1.00 40.89      C    C
ATOM 3049  C   SER C 226     -43.261  63.477  39.211  1.00 40.89      C    C
ATOM 3050  O   SER C 226     -43.936  62.759  38.474  1.00 40.89      C    O
ATOM 3051  CB  SER C 226     -41.274  64.563  38.298  1.00 40.89      C    C
ATOM 3052  OG  SER C 226     -41.684  65.810  38.841  1.00 40.89      C    O
ATOM 3053  N   VAL C 227     -43.820  64.344  40.083  1.00 43.63      C    N
ATOM 3054  CA  VAL C 227     -45.247  64.494  40.144  1.00 43.63      C    C
ATOM 3055  C   VAL C 227     -45.582  65.841  39.570  1.00 43.63      C    C
ATOM 3056  O   VAL C 227     -45.088  66.871  40.025  1.00 43.63      C    O
ATOM 3057  CB  VAL C 227     -45.793  64.412  41.536  1.00 43.63      C    C
ATOM 3058  CG1 VAL C 227     -45.122  65.496  42.391  1.00 43.63      C    C
ATOM 3059  CG2 VAL C 227     -47.324  64.534  41.463  1.00 43.63      C    C
ATOM 3060  N   ILE C 228     -46.454  65.863  38.542  1.00 47.24      C    N
ATOM 3061  CA  ILE C 228     -46.738  67.077  37.829  1.00 47.24      C    C
ATOM 3062  C   ILE C 228     -48.217  67.344  37.806  1.00 47.24      C    C
ATOM 3063  O   ILE C 228     -49.019  66.432  37.621  1.00 47.24      C    O
ATOM 3064  CB  ILE C 228     -46.275  66.955  36.406  1.00 47.24      C    C
ATOM 3065  CG1 ILE C 228     -44.749  66.776  36.349  1.00 47.24      C    C
ATOM 3066  CG2 ILE C 228     -46.778  68.163  35.622  1.00 47.24      C    C
ATOM 3067  CD1 ILE C 228     -43.978  67.961  36.928  1.00 47.24      C    C
ATOM 3068  N   ILE C 229     -48.618  68.625  37.995  1.00 49.00      C    N
ATOM 3069  CA  ILE C 229     -50.016  68.966  37.941  1.00 49.00      C    C
ATOM 3070  C   ILE C 229     -50.227  69.850  36.755  1.00 49.00      C    C
ATOM 3071  O   ILE C 229     -49.796  71.003  36.755  1.00 49.00      C    O
ATOM 3072  CB  ILE C 229     -50.496  69.712  39.148  1.00 49.00      C    C
ATOM 3073  CG1 ILE C 229     -50.351  68.825  40.390  1.00 49.00      C    C
ATOM 3074  CG2 ILE C 229     -51.937  70.182  38.891  1.00 49.00      C    C
ATOM 3075  CD1 ILE C 229     -50.559  69.589  41.690  1.00 49.00      C    C
ATOM 3076  N   PRO C 230     -50.869  69.334  35.733  1.00 51.49      C    N
ATOM 3077  CA  PRO C 230     -51.087  70.146  34.573  1.00 51.49      C    C
ATOM 3078  C   PRO C 230     -52.033  71.267  34.833  1.00 51.49      C    C
ATOM 3079  O   PRO C 230     -53.225  71.121  34.570  1.00 51.49      C    O
ATOM 3080  CB  PRO C 230     -51.517  69.192  33.462  1.00 51.49      C    C
ATOM 3081  CG  PRO C 230     -50.833  67.869  33.853  1.00 51.49      C    C
ATOM 3082  CD  PRO C 230     -50.726  67.929  35.388  1.00 51.49      C    C
ATOM 3083  N   ARG C 231     -51.517  72.418  35.285  1.00 51.08      C    N
ATOM 3084  CA  ARG C 231     -52.359  73.553  35.483  1.00 51.08      C    C
ATOM 3085  C   ARG C 231     -51.487  74.650  35.988  1.00 51.08      C    C
ATOM 3086  O   ARG C 231     -50.587  74.417  36.793  1.00 51.08      C    O
ATOM 3087  CB  ARG C 231     -53.487  73.355  36.504  1.00 51.08      C    C
ATOM 3088  CG  ARG C 231     -54.398  74.581  36.559  1.00 51.08      C    C
ATOM 3089  CD  ARG C 231     -55.692  74.374  37.339  1.00 51.08      C    C
ATOM 3090  NE  ARG C 231     -56.503  75.610  37.157  1.00 51.08      C    N
ATOM 3091  CZ  ARG C 231     -57.289  75.747  36.050  1.00 51.08      C    C
ATOM 3092  NH1 ARG C 231     -57.331  74.753  35.115  1.00 51.08      C    N
ATOM 3093  NH2 ARG C 231     -58.033  76.878  35.877  1.00 51.08      C    N
ATOM 3094  N   ALA C 232     -51.718  75.886  35.511  1.00 49.08      C    N
ATOM 3095  CA  ALA C 232     -50.907  76.956  36.008  1.00 49.08      C    C
ATOM 3096  C   ALA C 232     -51.459  77.314  37.347  1.00 49.08      C    C
ATOM 3097  O   ALA C 232     -52.677  77.403  37.496  1.00 49.08      C    O
ATOM 3098  CB  ALA C 232     -50.943  78.219  35.132  1.00 49.08      C    C
ATOM 3099  N   ARG C 233     -50.569  77.560  38.336  1.00 50.24      C    N
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Figure 10-48

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ATOM 3100  CA  ARG C 233     -50.983  77.904  39.668  1.00 50.24      C    C
ATOM 3101  C   ARG C 233     -52.025  76.920  40.095  1.00 50.24      C    C
ATOM 3102  O   ARG C 233     -53.213  77.231  40.106  1.00 50.24      C    O
ATOM 3103  CB  ARG C 233     -51.600  79.307  39.769  1.00 50.24      C    C
ATOM 3104  CG  ARG C 233     -50.633  80.437  39.413  1.00 50.24      C    C
ATOM 3105  CD  ARG C 233     -51.263  81.827  39.520  1.00 50.24      C    C
ATOM 3106  NE  ARG C 233     -50.221  82.824  39.147  1.00 50.24      C    N
ATOM 3107  CZ  ARG C 233     -50.587  84.096  38.817  1.00 50.24      C    C
ATOM 3108  NH1 ARG C 233     -51.904  84.456  38.843  1.00 50.24      C    N
ATOM 3109  NH2 ARG C 233     -49.637  85.007  38.454  1.00 50.24      C    N
ATOM 3110  N   ALA C 234     -51.597  75.694  40.438  1.00 53.30      C    N
ATOM 3111  CA  ALA C 234     -52.508  74.627  40.730  1.00 53.30      C    C
ATOM 3112  C   ALA C 234     -53.418  74.942  41.885  1.00 53.30      C    C
ATOM 3113  O   ALA C 234     -54.611  74.662  41.788  1.00 53.30      C    O
ATOM 3114  CB  ALA C 234     -51.798  73.299  41.036  1.00 53.30      C    C
ATOM 3115  N   LYS C 235     -52.937  75.607  42.960  1.00 58.84      C    N
ATOM 3116  CA  LYS C 235     -53.756  75.777  44.138  1.00 58.84      C    C
ATOM 3117  C   LYS C 235     -53.978  74.455  44.818  1.00 58.84      C    C
ATOM 3118  O   LYS C 235     -55.049  73.854  44.734  1.00 58.84      C    O
ATOM 3119  CB  LYS C 235     -55.135  76.401  43.858  1.00 58.84      C    C
ATOM 3120  CG  LYS C 235     -55.097  77.912  43.621  1.00 58.84      C    C
ATOM 3121  CD  LYS C 235     -54.391  78.322  42.329  1.00 58.84      C    C
ATOM 3122  CE  LYS C 235     -54.358  79.834  42.104  1.00 58.84      C    C
ATOM 3123  NZ  LYS C 235     -53.382  80.460  43.023  1.00 58.84      C    N
ATOM 3124  N   LEU C 236     -52.905  73.965  45.488  1.00 63.52      C    N
ATOM 3125  CA  LEU C 236     -52.864  72.721  46.221  1.00 63.52      C    C
ATOM 3126  C   LEU C 236     -52.731  73.017  47.696  1.00 63.52      C    C
ATOM 3127  O   LEU C 236     -52.804  74.164  48.134  1.00 63.52      C    O
ATOM 3128  CB  LEU C 236     -51.608  71.876  45.980  1.00 63.52      C    C
ATOM 3129  CG  LEU C 236     -51.261  71.565  44.525  1.00 63.52      C    C
ATOM 3130  CD1 LEU C 236     -50.857  72.847  43.784  1.00 63.52      C    C
ATOM 3131  CD2 LEU C 236     -50.179  70.478  44.467  1.00 63.52      C    C
ATOM 3132  N   ASN C 237     -52.612  71.935  48.505  1.00 65.59      C    N
ATOM 3133  CA  ASN C 237     -52.469  71.939  49.946  1.00 65.59      C    C
ATOM 3134  C   ASN C 237     -51.087  72.253  50.482  1.00 65.59      C    C
ATOM 3135  O   ASN C 237     -50.932  73.085  51.374  1.00 65.59      C    O
ATOM 3136  CB  ASN C 237     -52.880  70.579  50.543  1.00 65.59      C    C
ATOM 3137  CG  ASN C 237     -53.060  70.734  52.046  1.00 65.59      C    C
ATOM 3138  OD1 ASN C 237     -53.204  69.745  52.765  1.00 65.59      C    O
ATOM 3139  ND2 ASN C 237     -53.068  72.001  52.539  1.00 65.59      C    N
ATOM 3140  N   LEU C 238     -50.043  71.568  49.979  1.00 66.15      C    N
ATOM 3141  CA  LEU C 238     -48.694  71.707  50.471  1.00 66.15      C    C
ATOM 3142  C   LEU C 238     -48.615  71.269  51.905  1.00 66.15      C    C
ATOM 3143  O   LEU C 238     -47.610  71.504  52.575  1.00 66.15      C    O
ATOM 3144  CB  LEU C 238     -48.108  73.119  50.328  1.00 66.15      C    C
ATOM 3145  CG  LEU C 238     -48.093  73.553  48.855  1.00 66.15      C    C
ATOM 3146  CD1 LEU C 238     -47.084  74.682  48.593  1.00 66.15      C    C
ATOM 3147  CD2 LEU C 238     -47.953  72.333  47.935  1.00 66.15      C    C
ATOM 3148  N   SER C 239     -49.657  70.585  52.415  1.00 64.73      C    N
ATOM 3149  CA  SER C 239     -49.586  70.112  53.772  1.00 64.73      C    C
ATOM 3150  C   SER C 239     -48.870  68.799  53.745  1.00 64.73      C    C
ATOM 3151  O   SER C 239     -49.250  67.865  53.037  1.00 64.73      C    O
ATOM 3152  CB  SER C 239     -50.959  69.880  54.430  1.00 64.73      C    C
ATOM 3153  OG  SER C 239     -51.623  71.116  54.646  1.00 64.73      C    O
ATOM 3154  N   PRO C 240     -47.857  68.722  54.564  1.00 68.26      C    N
ATOM 3155  CA  PRO C 240     -46.964  67.595  54.602  1.00 68.26      C    C
ATOM 3156  C   PRO C 240     -47.713  66.314  54.696  1.00 68.26      C    C
ATOM 3157  O   PRO C 240     -47.244  65.308  54.160  1.00 68.26      C    O
ATOM 3158  CB  PRO C 240     -46.091  67.811  55.837  1.00 68.26      C    C
ATOM 3159  CG  PRO C 240     -47.009  68.600  56.784  1.00 68.26      C    C
ATOM 3160  CD  PRO C 240     -47.878  69.436  55.832  1.00 68.26      C    C
ATOM 3161  N   HIS C 241     -48.854  66.324  55.403  1.00 72.12      C    N
ATOM 3162  CA  HIS C 241     -49.648  65.141  55.512  1.00 72.12      C    C
ATOM 3163  C   HIS C 241     -50.800  65.380  54.602  1.00 72.12      C    C
ATOM 3164  O   HIS C 241     -51.762  66.039  54.984  1.00 72.12      C    O
ATOM 3165  CB  HIS C 241     -50.284  64.944  56.901  1.00 72.12      C    C
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Figure 10-49

ATOM	3166	CG	HIS	C	241	-49.303	64.864	58.032	1.00	72.12	C	C
ATOM	3167	ND1	HIS	C	241	-48.796	65.963	58.691	1.00	72.12	C	N
ATOM	3168	CD2	HIS	C	241	-48.746	63.779	58.635	1.00	72.12	C	C
ATOM	3169	CE1	HIS	C	241	-47.964	65.491	59.653	1.00	72.12	C	C
ATOM	3170	NE2	HIS	C	241	-47.901	64.172	59.658	1.00	72.12	C	N
ATOM	3171	N	GLY	C	242	-50.773	64.805	53.394	1.00	75.74	C	N
ATOM	3172	CA	GLY	C	242	-51.855	65.044	52.491	1.00	75.74	C	C
ATOM	3173	C	GLY	C	242	-51.304	65.197	51.112	1.00	75.74	C	C
ATOM	3174	O	GLY	C	242	-51.929	64.735	50.158	1.00	75.74	C	O
ATOM	3175	N	THR	C	243	-50.138	65.845	50.930	1.00	77.20	C	N
ATOM	3176	CA	THR	C	243	-49.661	65.806	49.582	1.00	77.20	C	C
ATOM	3177	C	THR	C	243	-48.250	65.308	49.559	1.00	77.20	C	C
ATOM	3178	O	THR	C	243	-47.300	66.049	49.764	1.00	77.20	C	O
ATOM	3179	CB	THR	C	243	-49.849	67.081	48.805	1.00	77.20	C	C
ATOM	3180	OG1	THR	C	243	-49.577	66.845	47.435	1.00	77.20	C	O
ATOM	3181	CG2	THR	C	243	-48.952	68.191	49.343	1.00	77.20	C	C
ATOM	3182	N	PHE	C	244	-48.067	64.005	49.276	1.00	71.63	C	N
ATOM	3183	CA	PHE	C	244	-46.757	63.419	49.333	1.00	71.63	C	C
ATOM	3184	C	PHE	C	244	-46.542	62.541	48.138	1.00	71.63	C	C
ATOM	3185	O	PHE	C	244	-47.467	62.289	47.369	1.00	71.63	C	O
ATOM	3186	CB	PHE	C	244	-46.581	62.574	50.601	1.00	71.63	C	C
ATOM	3187	CG	PHE	C	244	-47.772	61.680	50.640	1.00	71.63	C	C
ATOM	3188	CD1	PHE	C	244	-47.783	60.471	49.986	1.00	71.63	C	C
ATOM	3189	CD2	PHE	C	244	-48.900	62.073	51.325	1.00	71.63	C	C
ATOM	3190	CE1	PHE	C	244	-48.896	59.665	50.026	1.00	71.63	C	C
ATOM	3191	CE2	PHE	C	244	-50.015	61.272	51.369	1.00	71.63	C	C
ATOM	3192	CZ	PHE	C	244	-50.013	60.059	50.721	1.00	71.63	C	C
ATOM	3193	N	LEU	C	245	-45.283	62.088	47.930	1.00	65.02	C	N
ATOM	3194	CA	LEU	C	245	-44.971	61.252	46.796	1.00	65.02	C	C
ATOM	3195	C	LEU	C	245	-43.963	60.271	47.292	1.00	65.02	C	C
ATOM	3196	O	LEU	C	245	-43.108	60.626	48.104	1.00	65.02	C	O
ATOM	3197	CB	LEU	C	245	-44.196	61.908	45.646	1.00	65.02	C	C
ATOM	3198	CG	LEU	C	245	-44.523	63.375	45.472	1.00	65.02	C	C
ATOM	3199	CD1	LEU	C	245	-46.028	63.650	45.317	1.00	65.02	C	C
ATOM	3200	CD2	LEU	C	245	-43.836	64.089	46.628	1.00	65.02	C	C
ATOM	3201	N	GLY	C	246	-43.998	59.014	46.801	1.00	55.28	C	N
ATOM	3202	CA	GLY	C	246	-43.001	58.118	47.313	1.00	55.28	C	C
ATOM	3203	C	GLY	C	246	-42.865	56.894	46.460	1.00	55.28	C	C
ATOM	3204	O	GLY	C	246	-43.738	56.577	45.651	1.00	55.28	C	O
ATOM	3205	N	PHE	C	247	-41.728	56.176	46.645	1.00	47.05	C	N
ATOM	3206	CA	PHE	C	247	-41.454	54.947	45.950	1.00	47.05	C	C
ATOM	3207	C	PHE	C	247	-41.018	53.937	46.952	1.00	47.05	C	C
ATOM	3208	O	PHE	C	247	-40.263	54.246	47.874	1.00	47.05	C	O
ATOM	3209	CB	PHE	C	247	-40.182	54.855	45.098	1.00	47.05	C	C
ATOM	3210	CG	PHE	C	247	-40.210	55.763	43.953	1.00	47.05	C	C
ATOM	3211	CD1	PHE	C	247	-41.348	55.852	43.206	1.00	47.05	C	C
ATOM	3212	CD2	PHE	C	247	-39.069	56.438	43.590	1.00	47.05	C	C
ATOM	3213	CE1	PHE	C	247	-41.357	56.687	42.132	1.00	47.05	C	C
ATOM	3214	CE2	PHE	C	247	-39.086	57.270	42.502	1.00	47.05	C	C
ATOM	3215	CZ	PHE	C	247	-40.239	57.398	41.781	1.00	47.05	C	C
ATOM	3216	N	VAL	C	248	-41.443	52.681	46.738	1.00	40.65	C	N
ATOM	3217	CA	VAL	C	248	-40.957	51.600	47.531	1.00	40.65	C	C
ATOM	3218	C	VAL	C	248	-40.425	50.617	46.548	1.00	40.65	C	C
ATOM	3219	O	VAL	C	248	-41.052	50.347	45.524	1.00	40.65	C	O
ATOM	3220	CB	VAL	C	248	-42.008	50.907	48.343	1.00	40.65	C	C
ATOM	3221	CG1	VAL	C	248	-43.095	50.394	47.390	1.00	40.65	C	C
ATOM	3222	CG2	VAL	C	248	-41.338	49.782	49.150	1.00	40.65	C	C
ATOM	3223	N	LYS	C	249	-39.234	50.063	46.835	1.00	34.46	C	N
ATOM	3224	CA	LYS	C	249	-38.645	49.135	45.921	1.00	34.46	C	C
ATOM	3225	C	LYS	C	249	-39.117	47.782	46.325	1.00	34.46	C	C
ATOM	3226	O	LYS	C	249	-38.968	47.376	47.477	1.00	34.46	C	O
ATOM	3227	CB	LYS	C	249	-37.107	49.182	45.972	1.00	34.46	C	C
ATOM	3228	CG	LYS	C	249	-36.383	48.372	44.897	1.00	34.46	C	C
ATOM	3229	CD	LYS	C	249	-34.929	48.820	44.716	1.00	34.46	C	C
ATOM	3230	CE	LYS	C	249	-34.314	49.418	45.985	1.00	34.46	C	C
ATOM	3231	NZ	LYS	C	249	-32.933	49.884	45.732	1.00	34.46	C	N

Figure 10-50

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ATOM 3232  N    LEU C 250     -39.724  47.048  45.374  1.00 29.77      C    N
ATOM 3233  CA   LEU C 250     -40.245  45.753  45.686  1.00 29.77      C    C
ATOM 3234  C    LEU C 250     -39.078  44.787  45.840  1.00 29.77      C    C
ATOM 3235  1OCT LEU C 250     -38.331  44.584  44.847  1.00 29.77      C    O
ATOM 3236  CB   LEU C 250     -41.184  45.200  44.602  1.00 29.77      C    C
ATOM 3237  CG   LEU C 250     -42.477  46.021  44.451  1.00 29.77      C    C
ATOM 3238  CD1  LEU C 250     -43.389  45.439  43.362  1.00 29.77      C    C
ATOM 3239  CD2  LEU C 250     -43.196  46.184  45.800  1.00 29.77      C    C
ATOM 3240  2OCT LEU C 250     -38.927  44.236  46.964  1.00 29.77      C    O
END
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SEQUENCE LISTING

<110> Biogen, Inc.
Karpusas, Michael

<120> CRYSTAL STRUCTURE OF BAFF AND USE THEREOF FOR DRUG DESIGN

<130> A135 - PCT

<150> 60/317,524

<151> 2001-09-06

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Leu Gln Gly Thr Gly Gly Pro Ser Gln Asn Gly Glu Gly Tyr Pro Trp
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Gln Ser Leu Pro Glu Gln Ser Ser Asp Ala Leu Glu Ala Trp Glu Asn
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Gly Glu Arg Ser Arg Lys Arg Arg Ala Val Leu Thr Gln Lys Gln Lys
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Lys Gln His Ser Val Leu His Leu Val Pro Ile Asn Ala Thr Ser Lys
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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US02/28579

A. CLASSIFICATION OF SUBJECT MATTER
IPC(7) : C07K 14/00
US CL : 530/350
According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
U.S. : 702/27, 211/41.12, 435/7.1, 514/1

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
Please See Continuation Sheet

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	ECK et al. The Structure of Tumor Necrosis Factor-alpha at 2.6 Angstroms Resolution. The Journal of Biological Chemistry, 15 October 1989, Vol. 264, Number 29, pages 17595-17605, especially Abstract and Results and Discussion.	1, 4, 9-12
Y	BANNER et al. Crystal Structure of the Soluble Human 55kd TNF Receptor-Human TNFbeta Complex: Implications for TNF Receptor Activation. Cell. 07 May 1993, Vol. 73, pages 431-445, especially Results and Experimental Procedures.	1, 4, 9-12
Y	CHA et al. High Resolution Crystal Structure of a Human Tumor Necrosis Factor-alpha Mutant with Low Systemic Toxicity. The Journal of Biological Chemistry. January 1998, Volume 273, Number 4, pages 2153-2160, especially abstract.	1, 9
Y	ECK et al. The Structure of Human Lymphotoxin (Tumor Necrosis Factor-beta) at 1.9-Angstroms Resolution. The Journal of Biological Chemistry. February 1992, Volume 267, Number 4, pages 2119-2122, especially abstract.	1, 9
Y	US 5,939,528 A (CLARDY et al.) 17 August 1999 (17.08.1999), especially Summary of the Invention.	1-12, 24, 28, 71, 84, 88-89

☒ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
16 December 2002 (16.12.2002)	09 JAN 2003
Name and mailing address of the ISA/US Commissioner of Patents and Trademarks Box PCT Washington, D.C. 20231 Facsimile No. (703)305-3230	Authorized officer Carolyn Smith Valerie Bell-Harris for Telephone No. 703-308-0196

Form PCT/ISA/210 (second sheet) (July 1998)

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US02/28579

Box I Observations where certain claims were found unsearchable (Continuation of Item 1 of first sheet)

This international report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claim Nos.: 72-83
because they relate to subject matter not required to be searched by this Authority, namely:
Please See Continuation Sheet

2. ☐ Claim Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. ☒ Claim Nos.: 56 and 70
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of Item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest
☐ The additional search fees were accompanied by the applicant's protest.
☐ No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US02/28579

Box I Observations where certain claims were found unsearchable 1. because they relate to subject matter not required to be searched by this Authority, namely:

These claims related to subject matter not required to be searched by this Authority, namely, "methods for treatment of the human or animal body by surgery or therapy, as well as diagnostic methods," as set forth in PCT Rule 39, MPEP Section 1843.

Continuation of B. FIELDS SEARCHED Item 3:

EMBASE, MEDLINE, BIOSIS, SCISEARCH, WEST, and PUBMED searching terms: crystalline, BAFF, polypeptide, trimer, 3-D, structural coordinates, x-ray diffraction, Fourier transform, APRIL, synthesize, pharmaceutical composition, tumor necrosis factor